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ORIGINAL ARTICLES.

PUERPERAL SEPTICÆMIA.

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Pajot has said that the term puerperal fever ought to be consigned to the museum of antiquities. Certainly the profession generally replace it by puerperal septicæmia, a disease analogous to surgical septicæmia.

It can be defined an acute, contagious, febrile disease affecting women in childbed. This definition may seem to some not broad enough, for it does not include cases where the unborn infant is affected with a septic peritonitis, or where the undelivered woman has the disease, or where nurses attending cases of puerperal fever are attacked; and those still more extraordinary cases reported nearly 40 years ago by Mr. Storrs, where male subjects were affected by the poison of this disease, and died with peritonitis and pleuritis. But whether the facts referred to have been, as suggested by some, badly observed, or whether they are true, the field is wide enough without a definition which would include them; the term puerperal necessarily excludes their consideration.

Certain conditions favor the occurrence of the disease, they are predisposing causes. The building stored with, or partially constructed of inflammable materials, is swiftly consumed when the fire comes, and the gunpowder explodes at the touch of a spark. So physical and moral distress, primiparity, protracted, and especially artificial, whether manual or instrumental labor, crowding of obstetric wards, and cold weather predispose to the disease, but do not create it; they furnish material for the flames, they are the gunpowder without the spark. But whence the fire, and what is the spark? Here two opinions are presented. The disease is autogenetic, or heterogenetic; or it is always heterogenetic. Autoinfection suggests that the house makes the fire, the powder magazine furnishes the spark, explodes itself. It is the doctrine of spontaneous generation—a self-created poison imperils life, a blind and merciless fate dooming to disease, and often to death. The doctrine of autogenesis is a confession of ignorance—ignorance of the source of the poison—a confession which we have many times to make in regard to other forms of contagious disease. There are cases of scarlet fever where we cannot learn time and place of exposure to the scarlatinal poison—we cannot tell whence the disease came—but do we ever then conclude we have a case of autogenetic scarlet fever, an example of autoinfection? To ask is to answer the question.

Autogenesis may be a doctrine full of comfort to the obstetrician when isolated cases of puerperal septicæmia occur, and the lying-in room is but the vestibule of the grave, but is it not a simple hypothesis founded upon our ignorance, an hypothesis which we will not tolerate in similar diseases, and which is contradicted by those cases where we can distinctly trace the origin of the malady? The doctrine of identity of disease with multiple causes is not worthy of acceptation.

It seems more probable, more rational to conclude that puerperal septicæmia is always and everywhere heterogenetic. Such doctrine further commends itself by its practical results, and these are of especial interest and importance to doctors. We will be more careful and more successful in guarding the life of the puerperal woman accepting it.

The unity of the poison of puerperal septicæmia is coming to be a fixed article in the creed of most obstetricians. If this poison be not one, how happens it that sporadic cases of the disease present the same symptoms as those where the infection can be traced plainly to an external cause, and these sporadic cases likewise may beget similar cases? Moreover, multiplicity of causes may lead to inefficient prophylaxis, and various and vacillating therapeutics.

Still, in observing the genesis of a number of cases of puerperal septicæmia, we find one where cadaveric poison was the obvious cause, another where it originated in epidemic erysipelas; others where a case of uterine cancer was in the obstetric ward, and students making digital examinations of this patient afterward examined women in labor, until finally 14 lying-in women were infected; and similarly, a midwife had living with her her mother suffering from uterine cancer. She used daily vaginal injections for her, and had her general care—all the women whom this midwife attended in labor were infected; or, take the cases where sewer-gas, or the miasm from decaying animal matter, from butcher shops, from cesspools seemed the cause of the disease. Consider the remarkable case given by Charpentier, where a physician, immediately after visiting a patient having phlegmonous inflammation of the thigh, wishing to learn the condition of uterine involution in the case of his wife, then at the seventeenth day after her delivery, made a digital examination, and the result was she had fatal septicæmia. These, and many other

instances of apparent multiplicity of causes, are to be interpreted as showing that the one cause was in all, that the apparent causes were the bearers of the true cause.

An illustration of the consequences of a retained placenta fell under my observation during my recent service in the obstetric department of the Philadelphia Hospital. A woman was delivered of her child but the placenta not passing off in the usual time the interne, following the common, but I believe dangerous practice, a practice not to be adopted unless hæmorrhage demands such violent interference, introduced his hand into the uterus, and took away in fragments all that he could of the placenta, but fragments also were left behind; in three days she had an offensive discharge, then fever, abdominal swelling and tenderness, arrest of uterine involution; and the women lying on each side of her also had septicæmia. Plainly the second and third cases were examples of heteroinfection, but was the first autoinfection? No, the operator either carried the disease germs upon his hands, or, and this is more probable, they were borne in by the air admitted in his manipulations, and finding suitable soil for their development, infection followed.

But is not multiplicity of causes indicated by the different forms which the disease presents? In one case it strikes as with the terrible power and suddenness of the thunderbolt, and in another the malady is mild and brief, and in a third is protracted through many days, or even weeks. But scarlatina may kill in a few hours, or again be so mild as to be scarcely an indisposition; in some families it is a grave, in others a slight malady; some epidemics of the disorder are marked by great, others by small mortality. But the essential nature of the disorder is unchanged in its numerous and diverse manifestations. In puerperal septicæmia the disease may differ because of the quantity of the poison entering, the avenues by which it enters, the parts primarily or secondarily affected, and above all by the inherent susceptibility, the receptivity, the greater or less vital resistance of the subject.

It is hardly necessary at this day to insist upon the contagiousness of puerperal septicæmia. Woe to the man, woe to the households he enters as an obstetrician, who does not accept this important truth demonstrated by so many hecatombs of women perishing in childbed.

Single and contagious as is the poison of puerperal septicæmia, according to the belief of most, we are still met by the question as to its essential character. The parasitic nature of this poison is accepted by most obstetric authorities. Delore, *Traité Pratique de l'Art des Accouchements*, Paris, 1883, remarks that puerperal fever has for its primary cause the introduction into the organism of the puerperal woman of bacteria which produce septicæmia. Charpentier, in the second volume of his *Traité Pratique des Accouchements*, Paris, 1883, referring to the cause of puerperal fever, adopts the views of Pasteur, regarding this agent as a proto-organism, and this organism not being single, but existing in numerous varieties, the several forms of affections, of accidents observed in puerperal women are explained. Spiegelberg, in the last edition of his *Lehrbuch der Geburtshülfe*, states that everything tends to regard the spherical bacteria as the bearers of the poison, to look upon them as a *contagium animatum*. Kleinwächter, *Grundriss der Geburtshülfe*, 1881, refers to puerperal fever as an infectious disease depending upon a specific poison, the real bearers of the poison being low plant-like organisms found in putrid fluids. In a word, the doctrine most generally accepted to-day is that without microbes puerperal septicæmia is impossible. Further, the fever frequently observed in connection with the establishment of the milk secretion, so commonly known as milk fever, and by some called traumatic fever, is really a mild septicæmia; and so too phlegmasia alba dolens is simply one manifestation of septicæmia—in short almost all the affections of women in childbed have a septicæmic origin.

Magrier, *Des Formes Diverses D'Epidémies Puerperales*, Paris, 1883, referring to the fact that Pasteur found in the lochia of women suffering with septicæmia a very great number of low organisms, while in other cases he could by an examination of the lochia predict the invasion of the disease, the event verifying the prediction, and that the blood of women dying from the disease presented the same organisms, these microbia penetrating into the blood-vessels cause the infection. "But before Pasteur, Delore in 1869, Orth in 1872, Heiberg especially in 1878, have seen numerous parasites in the lochia, and in the peritoneal exudates. Heiberg has traced them into the veins, and into the lymphatics." Fluids containing these microbes have been injected into the uterus, or into the peritoneal cavity of inferior animals, and septicæmia resulted.

To enter into the argument, to answer the objections made to the Pasteurian theory, viz.: microbes come from the diseased organism, and not from without; they have no action, but are simply an epiphenomenon of the disease; microbes do not act directly upon the tissues or upon the blood, but indirectly by soluble septic products which are made at the expense of these same tissues—objections which have been so well answered by Dr. Paul Bar, *Des Méthodes Antiseptiques en Obstétrique*, Paris 1883,—would involve too long a discussion. Besides, it is a question chiefly for those expert in microbiologic researches, and therefore I acknowledge my incompetence.

Passing from this general consideration of puerperal septicæmia, I will now present some illustrations of the disease as it occurred at the Philadelphia Hospital the first three months of the present year, during my service as a member of the obstetric staff of the hospital. In this time seventy-two women, including, however, one case of miscarriage at six months and a half, were delivered, and twenty of these had septicæmia, three dying. Such puerperal morbidity and mortality will not surprise any one who knows the wretched sanitary condition of the obstetric wards. In the winter months the wards are crowded; they are badly ventilated, without bath-rooms, and water-closets, the very walls diseased by the many epidemics of childbed fever, so that the poison seems to have found a permanent lodgment, remaining in

spite of disinfection, and defying antiseptics. But, I am happy to say, although this Carthage is not to be destroyed, new maternity wards are in process of construction, and when this is accomplished the percentage of disease and death among lying-in women forced to take refuge in the hospital, will be greatly lessened.

The first fatal case of septicæmia was a colored girl, sixteen years of age, unmarried, and a primipara. She was delivered on January 12 of a female child weighing eight pounds, after a labor of nearly twenty-four hours; the presentation was pelvic. Her convalescence seemed to be uninterrupted until fourteen days after her labor when she complained of pain in the abdomen, and had some fever. The next day she was transferred to the fever ward; her pulse was then 120, and her temperature 102, the abdomen tender on pressure and somewhat tympanitic. The symptoms of peritonitis were well marked. No chill occurred at the beginning or in the course of the disease. In three days pleuritis was evident, and death took place on the first of February, the seventh day of illness, or the twentieth day of puerperality. The following were the post-mortem conditions as given by Dr. Shakespeare, one of the pathologists of the hospital.

Mahallah Price, colored, æt. 16.

External appearance.—Evidence of blister over epigastrium and lower aspect of each mamma. Shows abrasion of an area of about three square inches. Nothing else noticeable.

Thorax.—Very extensive adhesions of both sides, consisting of recent, mainly dry lymph of a yellowish color. The same material also binds the lobes together. The thoracic cavity contains a considerable amount of serous fluid. The pericardial cavity also contains considerable fluid, and there are numerous minute ecchymoses on the parietal pericardium, especially near the origin of the vessels, and extending along the anterior surface. The visceral pericardium, particularly on the anterior surface, shows similar ecchymoses.

The *heart* is of normal size, consistence and color. The right ventricle partly occupied by a clot mainly chicken-fat in character, which toward the pulmonary orifice assumes a fibrous consistence, and extends far into the pulmonary vessels. The left ventricle is of normal size and contains a very small clot, fibrous in character, which does not extend beyond this cavity. The valves and ascending aorta normal.

The left lung is completely solidified, but nót appreciably swollen. The cut surface appears smooth, semi-translucent and not at all granular. In the lower lobe there are one or two wedge-shaped areas characterized by a difference in color from the surrounding tissue, and in them are slight appearances of granulation. They are mainly superficial and probably embolic in origin. No emboli are seen in the vessels comprised in the area, yet the vessels occupy the central portion of these areas. No such appearances of embolism are noticeable in the upper lobe. The right lung shows the two upper lobes normal in appearance, as are also the lower lobes. The latter, however, are slightly congested and contain little air. The bronchial glands of right side contain some points of cheesy and others of calcareous degeneration. These glands are not softened. The glands on the left side are considerably softened, but contain no caseous points.

The *abdomen* contains considerable serous fluid, with many large floating flocculi, yellowish in color. Adhesions are numerous between the coils of intestine, omentum and abdominal walls, particularly marked over liver and pelvis. Adhesions are easily torn, consisting of recent unorganized lymph.

The *uterus* is about 5 inches in length, 3½–4 in breadth and 2 in thickness at the fundus. The external surface is covered with lymph, especially well-marked in the posterior cul-de-sac, and over the ovaries. No abnormal appearance is noticed in the walls of the uterus or in the lining of the uterine cavity.

The *liver* weighs 4½ pounds, somewhat enlarged, surface smooth where there are no adhesions. It is of a deep red color, and the capsule of Glisson readily strips. The gall-bladder contains but little fluid, and this of a dark, grumous character. No calculi. The right lobe thickened from above downward to the extent of about four inches. Cut surface natural color, dark red, and presents no visible abnormality. The substance, however, is easily mashed and torn by the finger, but the organ is not flabby.

The *spleen* is but little, if at all enlarged, and weighs six ounces. Surface normal. Organ somewhat flabby, the pulp is dark red in color and somewhat lessened in consistence. No other noteworthy appearance.

Substance of the *pancreas* normal.

Kidneys of normal size and appearance. The capsule readily strips, leaving a smooth surface. The substance of the organ firm and not visibly altered.

Cause of death.—(Puerperal?) plastic inflammation of the serous cavities with left-sided pneumonia.

E. O. Shakespeare,
Pathologist.

Here is a fatal septicæmia involving the great serous membranes which gave no indication of its presence until fourteen days after labor, and its advent was not marked by a chill—nature gave no cry of alarm. These facts are certainly remarkable. My friend, Dr. Shakespeare, expressed the opinion that such extensive disease probably indicated a longer duration than the record showed. Another point of some interest in this case is that the temperature never rose higher than 103⅘, and that elevation occurred just before her death.

The second fatal case was a colored woman, 22 years of age, the mother of four children. Her labor, occurring at term, lasted a little more than six hours. She was doing well until the third day, when without any preceding chill, her temperature rose to 102. She became delirious the afternoon of that day, attempted to kill her child; jumped out of bed, running about the ward, and it was only after repeated doses of chloral she was quieted. I saw her the next morning, when she was quite rational, but she still had fever, the lochial discharge was scanty and very offensive, the uterus was tender to the touch and

larger than it should have been at the fourth day, and she was removed to the fever ward. That evening her temperature was $105^{3}/_{5}$; it gradually lessened until the evening of the day before her death, which occurred on the sixth day of the disease, it fell to 101, but rose the evening of her death to $106^{1}/_{5}$. Her pulse varied between 120 and 150.

The post-mortem was made by Dr. Formad, and the report of it is as follows:

Thorax.—No effusion in the pleura. Lungs highly congested and filled with œdematous fluid colored by decomposing coloring matter of the blood; otherwise natural. Pericardium contains some increase of fluid—also discolored. Heart very much softened, congested, and muscular tissue friable, giving signs of acute atrophy; otherwise size and condition of organ normal.

Abdomen.—Signs of a recent peritonitis, but not of a purulent character, the serous membrane being only congested, and no exudate of any kind visible. The mesenteric glands are all enormously enlarged, and upon section show cheesy infarction, and to some extent purulent contents. The lymphatic glands are also enlarged, some of them reaching the size of a walnut.

Uterus.—This is the size of a child's head, and on section the muscular walls show a thickness of about one inch. The mucous membrane is in a state of acute inflammation accompanied by gangrenous change. There appear to be some fragments of placenta with some necrotic change adherent to mucous membrane.

Ovaries.—These are normal.

Liver is in a state of acute yellow atrophy, being soft and friable. The parenchyma gives evidence of acute softening change. Gall-bladder filled with normal bile. Weight of liver 2 pounds 6 ounces. Spleen is completely disintegrated, being only a pulpy, semi-fluid mass, held together by the capsule. Kidneys completely softened by septic changes; otherwise normal in size. Rest of organs all softened, and give evidence of acute septic change. A good many of the changes must be attributed to post-mortem causes, the examination being made 30 hours after death, but the case is nevertheless undoubtedly one of septic poisoning, taking its point of departure from the gangrenous changes in the cavity of the uterus.

The third fatal case of septicæmia was a multipara, twenty-four years of age. She was taken in labor on the evening of the 23d of January; the left shoulder presented, the head being upon the right side of the mother's pelvis. I was called to the case, but it was after the labor had lasted nearly twelve hours, and very serious injury resulted from the delay, which was in part caused by an unfortunate accident. The patient was etherized immediately upon my arrival, and in a brief time and without violence podalic version was performed, and a dead child delivered; the placenta passed off in the usual time, and neither before nor afterward was there any unusual discharge of blood. Visiting her the next morning I found that the nurse who had been directed to use the catheter, had failed to draw any water from the bladder, and introducing my finger into the vagina, I found quite a large opening through the vesico-vaginal wall. I never dreamed, however, of the more serious nischief also resulting from the delay in delivery, which the post-mortem revealed. But not to anticipate, the patient's temperature twenty-four hours after labor, was $100^{4}/_{5}$, but the next morning it had fallen to $100^{1}/_{5}$, rising, however, that evening to 101. Great irritability of the stomach began the second day after delivery, and continued with only slight occasional abatement; the third day she had a chill at 4 A. M., and the fourth day another chill at 8 A. M., her temperature then rising to 104. She had great tenderness when pressure was made upon the uterus, and over the right broad ligament; the uterus was very little below the umbilicus, and the lochial discharge was very offensive; entire absence of milk secretion. She had occasional attacks of diarrhœa; her face was pinched, anxious, generally bathed in perspiration, and had a sort of leaden hue. The sixth and seventh days also a chill occurred, and on the eighth she died. The fourth and fifth days of her illness her temperature was only 99, but the sixth it rose to $102^{1}/_{5}$, and on the morning of the day of her death was a degree higher.

February 1, 1884. Maggie Dougherty, aged 26, white, autopsy 26 hours after death.

External appearance.—Considerable lividity and mottling of the skin of the dependent portions of the body, but not of the upper, it being blanched.

Thorax.—Pleural cavities normal. Pericardial cavity contains half an ounce of serous fluid. Pericardium normal.

Heart.—Some slight congestion of the small vessels at the root of the large cardiac vessels. Of normal size and normal external appearance, and of flabby consistence. The ventricles and auricles contain dark, clotted blood; no abnormality otherwise, except a small, somewhat tough fibrinous clot in the right ventricle.

Lungs.—Normal, except the lower lobes, which are much filled with hypostatic blood.

Abdomen.—Cavity contains a considerable amount of puriform fluid. Both the visceral and parietal peritonæum show general congestion, and some points are covered with lymph. In the iliac fossæ the adhesions of recent lymph are quite extensive. The purulent collection and lymph are quite marked in the pelvis.

Uterus.—Of flabby consistence, about six inches in length, four inches in breadth, and averaging an inch in thickness. On exposing the cavity, it is found that the mucous membrane and uterine wall at the cervix are extensively degenerated, of a dark gangrenous appearance, and on the left side there is a very extensive rupture, involving the whole length of cervix and lower portion of the body of the uterus.

Liver.—Pale, smooth surface, and flabby. Capsule of Glisson not abnormal, but the cut surface, notwithstanding its flabbiness, shows an increase of consistence. The finger is forced into it with some difficulty. Somewhat buff in color. The lobules are not distinctly marked. It weighs 2¾ pounds.

Spleen.—Pale in color, and weighs 4½ ounces.

Capsule smooth; pulp light-colored and only slightly softened.

Kidneys.—Nothing abnormal.

Cause of Death.—Acute puerperal peritonitis, probably of septicæmic origin.

E. O. SHAKESPEARE,
Pathologist.

Certainly this post-mortem greatly surprised me by the revelation of a rent in the uterus. Indeed, in thinking over the history of the case, knowing that an opening occurred soon after labor in the vesico-vaginal wall, as a consequence of the long continued pressure, it seemed to me possible that the rupture of the uterus had a similar origin, and like it occurred after labor. In conversation with Dr. Shakespeare he admitted the possibility of this explanation. There had been no failure of uterine contractions, no severe, sudden suffering, no hæmorrhage, no indication of shock. Nevertheless rupture of the uterus may occur without any of these symptoms. Hervieux, *Maladies Puerperales*, remarks that in some cases the uterine rent is made silently—no pain, no complaint, no crisis; and if a post-mortem is made one is astonished to find a rupture has occurred. He further gives in illustration a case that occurred to Dubois, and one in his hospital service, under the care of Tarnier; in each of these patients a more extensive rupture was shown at the post-mortem than occurred in my patient, and yet there was not the least suspicion of it during life.

Admitting this to have been a rupture, and not the result of prolonged pressure with subsequent sloughing, should it be classed among the spontaneous, or the traumatic ruptures? I incline to the belief that it was traumatic, and that it was done during podalic version. Those who are familiar with Baudl's explanation of uterine rupture beginning in the neck, can readily understand how in this case of impossible labor the struggle between cervix and body had gone on until the wall of the latter becoming thicker and stronger, that of the former was thinner and weaker so that the additional strain made upon it, in even the gentle introduction of the hand, caused it to give way, or it might have given way by the sweeping of the head, or a foot now brought down, against that part which had been most injuriously pressed upon. Certainly I have learned the danger that may attend podalic version where some hours have passed with the shoulder wedged in the pelvic entrance. Baudl very well remarks that the practitioner is placed between Scylla and Charybdis in such a case—rupture is liable to occur at any minute from a violent contraction of the uterus, and it is liable to occur from his intervention, especially in performing version.

I shall not give in detail any of the seventeen cases of septicæmia in which recovery took place. In three of them no chill was observed at the beginning, or in the course of the disease, while in others not only the initial chill occurred, but repeated chills, the intervals being irregular, were noted during the illness. In most the milk secretion was arrested, in some only lessened. The lochial discharge was with one or two exceptions, offensive. The constant symptoms were fever, abdominal pain, and arrest of uterine involution—in some cases the uterus became notably enlarged at the beginning of the disease. The highest temperature observed was 106; one of the patients showing this evening elevation, the next morning had a temperature of only $100\frac{2}{5}$—nevertheless it rose again in the evening to 102, the next evening to 103, and her illness continued for two weeks longer.

Another case of special interest was one in which the first elevation of temperature occurred the second day of puerperality immediately after an attack of epilepsy, a disease which she had suffered with for years, the attacks, however, occurring at long intervals.

In another patient in whom the eruption of measles appeared on the eleventh, and who was delivered on the twelfth of January, the septic poison seemed to first manifest itself on the sixteenth by symptoms very similar to those often observed in pernicious fever—copious perspiration, vomiting and purging, great prostration, cold extremities, pinched expression, and pulse exceedingly frequent and feeble.

Some of the patients had albuminuria, but as examinations were not made in all cases into this condition, I omit other reference to it.

The treatment was supporting, antipyretic and antiseptic. In carrying out the latter the rule was to give vaginal injections in all cases where the lochial discharge was offensive every four hours, and intra-uterine injections morning and evening, the material for injection being either a three per cent. solution of carbolic acid, or a solution of corrosive sublimate one part to 2,000 of water, or a mixture of equal quanties of these.

In conclusion, let me ask the members of the Section as to the prophylaxis and treatment of puerperal septicæmia, which their experience has proved the most useful.

MICROSCOPIC EXAMINATION OF THE DISCHARGES BY DR. SHAKESPEARE.

My Dear Sir:—I regret much that you have not received an earlier response to your note requesting some statements of my examination of lochial discharges for the presence of bacteria. The examinations I have had the opportunity to make, although not extensive, appear in the main to confirm the opinion of Doleris as to the association of swarms of certain bacterial forms and the occurrence of fever.

As a rule, I have noticed both in those cases apparently progressing normally at the time of examination of the lochia, but which subsequently developed fever, and in those cases which, early after parturition and at the time of examination, were the subjects of febrile disturbance, that certain forms of bacteria were present in great numbers, viz.:

Swarms of micrococci in zöoglœcia masses; immense numbers of diplo-cocci; chaplets of micrococci in strings of from four to eight; and rods of a peculiar form.

Whether these bacteria have aught to do with the production of puerperal fever, or can be invariably relied upon as a sign of impending danger, my observations are as yet too limited to determine.

Yours truly, E. O. SHAKESPEARE.

DISCUSSION.

Dr. Seymour, of Troy, New York, referred to two cases bearing upon the subject of the paper, which were reported by him and printed in the April number of the *Obstetrical Journal* for the present year.

Dr. Robertson, of South Carolina.—Mr. Chairman: I would like to make a few remarks upon this subject. I have been practicing medicine for forty-four years amongst a population where you would suppose there would be septicæmia—in the negro cabins, where they have nothing but midwives. Such a thing as sepsis was never heard of until a short time ago I had a case, and I found a woman with a little fever, and I asked the midwife if she had practiced antisepsis, and she said no, that she had sent for "Auntie Sepsis," but she would not come. That is what she knew of antisepsis.

I have never found a case of puerperal fever in the negro population. If sepsis is such a horrible and dreadful bugbear, why should not we have it, when there is nothing to prevent it when we have nothing but ignorant midwives? and yet I have never seen a case of it among them. I have seen puerperal convulsions, but not one that I know of ever having had puerperal fever, or scpticæmia. And where else would you expect to find it? If you read the account of these New York physicians, where it is necessary to wash the walls, inspect the curtains, and inject the women every three or four hours, you might find antisepsis there.

Gentlemen, I think there is a regular bacteriomania prevailing, and there must be something done to arrest it; or else I do not know what will become of the poor women if we have to have a nurse to go around and inject them every three or four hours, and wash the walls with bichloride of mercury and carbolic acid, and all those things. We will have to have some trained nurses.

Dr. Sutton, of Pennsylvania.—Mr. Chairman, this paper is so eloquent, so up to my own notions on the subject of septicæmic troubles after labor as well as after operations in the vagina, that I cannot pass it by without a word of commendation. I agree with Dr. Parvin that to say that puerperal septicæmia is autogenetic, is simply to acknowledge our ignorance. I believe that many a man and woman, going to attend a woman in confinement, carry her death warrant under their finger-nails. I believe that when a man has a case of puerperal septicæmia, he has not to look about him for causes that exist in the cellar or other parts of the house. But let him examine his own self, his hands and clothes, and all his surroundings, and see if he cannot trace the carrying of that poison to the woman. And again, if he has one case, let him stop until he is certain that he has purified himself. There is one precaution against puerperal septicæmia that every man and every woman can take, and that is making sure that his or her hands are perfectly clean before they are introduced into the vagina or uterus of a woman, to make sure that the nails be pared, the arms and hands should be washed with turpentine and subsequently with soap and water or some alkaline solution. I believe if this precaution is taken and the bedding and other surroundings of the patient are clean, the chances are that the patient will escape.

Dr. Ross, of Pennsylvania.—Mr. Chairman: I simply rise to ask a question. In all cases that we see of puerperal diseases, we have it in a distinctly intermittent form. Now the question I want to ask is, are the diseases, or the parasites of the same kind? Is there a difference between the septicæmia of puerperal fever and any common septicæmia from other causes? I simply desire to ask the question.

Dr. Milner, of Chester, Pa., being called upon by Dr. Sutton.—Mr. Chairman: I remarked to Dr. Sutton that I thought I was to blame for not having taken proper precaution in some of my cases. Some of the cases of puerperal fever were due to our enemy along the river, but I think that some of the cases I have been to blame for. I did discover an old glove that I think had something to do with it.

Dr. Chancellor, of Virginia.—Mr. Chairman: I do not propose to speak of any experience I have had of puerperal septicæmia, but I am here, sir, as a learner. I may say that I have not had any large experience in the terribly fatal cases. I do not know whether it is from the great precaution that I use, as every physician ought to use and possibly does use; but I can just state this fact, which may carry with it some suggestion—that I never made a digital examination in the lying-in room without disinfecting my hands. As my old friend and valued preceptor, Dr. Charles Meigs, of Philadelphia, used to say, "No man should go to a lying-in patient without disinfecting his hands, or make an examination without having thoroughly washed and cleansed his hands, because the very last man or woman he might have shaken hands with might have infected his hands." It is upon that principle I have acted in the last thirty-five or forty years that I have been in general practice.

But I did not rise to speak of any practice of my own, for my experience has not been large; but to ask of Dr. Parvin, who has given us this able paper, to give us his experience in certain antiseptics. There are a great many of these antiseptics coming up now—"germicides," as I may call them—and I have the right to ask the doctor to answer one or two questions in regard to them—carbolic acid, the bi-chloride of mercury, turpentine (which has recently come up as a disinfectant), or the more recent, probably, new remedy of listerine. Will the author please favor the Section with his experience in regard to some of those remedies with which he is so familiar?

Dr. Parvin.—Mr. Chairman: I find that while I put questions the gentleman there (Dr. Chancellor) is putting questions to me, which is something that I did not quite expect. But I can say that, as to the use of listerine, I have never tried it. The disinfectants of which I have any practical knowledge—or the "germicides," I would rather say—are carbolic acid and corrosive sublimate.

I might say that as to the puerperal illness of septicæmia, I was induced to reject vaginal injections. I used them twice a day in several cases, and yet those very cases were just as liable to have septicæmia, if

not more so, than those in which the vaginal injection had not been made. I have seen within a few hours the temperature fall from 103 to 101 after a free injection of corrosive sublimate, and I have seen the offensive lochial discharge disappear; and I would rank as the most valuable treatment of septicæmia the use of germicides in the vagina or uterine cavity.

ON SUDDEN DEATH IN LABOR AND CHILDBED.

BY WILLIAM THOMPSON LUSK, M.D., OF NEW YORK CITY.

Read before the Obstetrical Section of the American Medical Association, May, 1884.

On the first of January of the present year at six o'clock in the morning I received a summons to attend a case of confinement. The patient belonged to the clientéle of Dr. Bangs, but owing to the illness of one of his children with scarlatina, he had from conscientious motives, requested the family to call upon me in case the labor should occur before the recovery of his child should place him at liberty to resume his midwifery practice. The patient was a very beautiful young woman, a primipara, 23 years of age, to all appearances in the enjoyment of excellent health, and full of happiness at the prospect of becoming a mother. In the bright sunshine of the early morning there was nothing to suggest the tragedy with which the day closed. The examination made upon my arrival demonstrated the beginning of cervical dilatation, and a head presentation. The parts were, however, at that time excessively sensitive to the touch. The pains recurred at intervals of ten minutes. When I entered the room the patient was pacing the floor.

Noticing that she did not, as is usual, sit down when her pains seized her, I questioned her as to her reasons, and was told in reply that she was determined that no sound from her lips should betray her sufferings, and that she found it easier to support the pangs of labor when in motion than when at rest. I likewise learned that with the view of carrying out her resolution, labor having begun late in the previous afternoon, in the place of going to bed she had kept upon her feet throughout the entire night. To my repeated suggestions that she would tire herself out, she assured me that I need not worry, as she felt no apprehensions about herself, and indeed her cheerful spirits and bright color seemed abundantly to support her hopeful words. The labor, however, dragged along slowly. The head dilated the cervical canal without the formation of the bag of waters, and, though the head was low in the pelvic cavity, at eleven o'clock the dilatation of the os externum had made but slight progress. I then told my patient that I thought, by a slight manœuvre, I could shorten materially the duration of the labor. Owing to the sensitiveness of the genital canal, to which I have already referred, I gave her enough chloroform to dull sensation, but not enough to abolish consciousness. With two fingers I next lifted the head from the cervical walls so as to allow the bag of waters to form in front of the child's head. As I had anticipated, dilatation speedily followed, and, in about half an hour, the head, freed from the cervix, rested on the perineal floor. At noon I suggested to my patient that she must be tired, and that as there was no longer any difficulty or danger from the use of forceps I would advise her to allow me to hasten the birth of the child. To this she energetically answered "that she wished the glory of having her baby herself;" and as in reality she seemed to be making fair progress I unfortunately acceded to her wishes.

From this time on the patient remained in bed. Between 1 and 2 P. M., on going to the bedside to make an examination, I noticed that the color had left her face. Although straining energetically, she manifested no signs of suffering. On asking her whether she was in pain, she replied in a dazed way, "I don't know; I suppose I am; I don't know whether I am or not." After hastily making preparations for possible post-partum hæmorrhage, I once more gave chloroform, applied the forceps, and without difficulty extracted a child weighing between seven and eight pounds. The child was pallid, and breathed feebly at first but soon cried lustily. Before the forceps were applied meconium appeared at the vulva. The uterus was like an empty sac, and the anticipated hæmorrhage was not long delayed after the removal of the placenta. A hot water vaginal douche quickly arrested the flow, but not until after a couple of pints of blood had been lost. Meantime the room had grown dark and, as the curtains were raised to enable me to see the face of my patient, it seemed as though the stamp of death was upon it. The extremities were cold, and at the wrist no pulse could be felt. Still consciousness was not lost as the patient responded to questions, and manifested slight pain when brandy was injected under the skin. The respirations were quiet and undisturbed. Under the continued use of restoratives the color returned to the face. The patient began to complain of thirst, and begged for a goblet of water in place of the teaspoonful of fluid administered to her at short intervals. She likewise begged to be allowed to turn upon her side. In spite of the extreme feebleness of the radial pulse, the condition of the patient at seven o'clock was such as to inspire me with the expectation of her recovery, so that, placing her in the hands of my friend, Dr. Anderton, I went down stairs to dinner. In my absence she suddenly turned in bed. For a moment the heart ceased to beat, and, though she rallied for a time, by 7:30 P. M. I was called hastily to her room, arriving just in time to witness the final breath.

In prefacing his remarks upon the class of cases to which the sad history I have related belongs, Winckel says, "He who has once seen a puerperal woman happy and joyous in the expectation of soon leaving her couch, and then directly afterward has found her a corpse, will be able to comprehend the truth of Hervieux's words: 'In the twinkling of an eye all the calculations of prudence are set at naught; the most untiring vigilance, the best established rules of hygiene, all the varied resources and the ingenious combinations of therapeutics are shattered against an

invisible rock.' " And then Winckel adds: "The only thing which remains for the physician to do after such a depressing occurrence is to seek out the cause of the sudden death."

But when the conscientious physician seeks for light concerning the cause of the tragedy in which he has played the part of a powerless spectator, he will find but scanty guidance in the few brief lines devoted to the subject in the systematic treatises upon midwifery. He will learn in later works that, apart from such rare accidents as cerebral apoplexy or heart rupture, or fatal endings from hæmorrhage, from eclampsia and acute septicæmia, the causes of sudden death are to be found in the entrance of air into the circulation and in pulmonary embolism; and to these, in older works, he will find the admission added that death may be due to exhaustion or shock; but in spite of the very copious clinical material scattered through journals and society reports, there will be but little information concerning the pathology, the symptoms, and the mechanical conditions which respectively belong to the various processes to which death is attributable. For convenience of reference, but with no pretense at originality, I have thought it might be profitable to arrange in orderly sequence such facts bearing upon the question as have come to my notice in the inquiries which my own case has rendered it obligatory upon me to institute.

THE ENTRANCE OF AIR INTO THE CIRCULATION.

The passage of air from the uterine cavity into the circulation is rendered possible by the presence of open sinuses, or of sinuses closed by soft, easily detached thrombi. These conditions are always present previous to delivery in the case of partial separation of the placenta, and in the puerperal state, especially in the latter where, owing to debility, or the undue prolongation of labor, the expulsion of the ovum has been followed by imperfect retraction.

Air may be forcibly driven into the uterus by means of the uterine or even the vaginal douche. For this reason the syphon syringe ought to be discarded from midwifery practice. It is never a safe instrument, and I have prohibited its employment in all the public institutions with which I have been connected. The objections to the continuous stream furnished by a vessel placed at a height above the patient, based upon the insufficient force of the current, are purely theoretical. It is not necessary that the nozzle of the syringe should be introduced directly into the uterine cavity for accidents to occur. When the vaginal douche was much in vogue as a means of inducing labor after the prescription of Kiwisch, not a few instances of sudden death were reported as the result of its employment. In a case reported by Wiener[1] in Spiegelberg's clinic, where the tube of the douche apparatus was free from air, collapse, from which, however, the patient recovered, resulted from the hydrostatic pressure forcing air previously introduced into the vagina up into the uterine cavity. If the method of Kiwisch is selected to induce labor, the stream should at first be introduced with great gentleness.

Less familiar than these cases of forced air injection, are instances of the spontaneous entrance of air into the uterine sinuses. Every day gynæcological experience teaches us the mechanism by which this phenomenon may be produced. In great part the modern advances in the treatment of the diseases of the genital canal result from the discovery we owe to Sims that, in certain body postures, the intra-abdominal pressure is reduced to such a degree that, provided the vaginal orifice be dilated by the speculum or the finger, air enters and distends the canal. The three positions which most favor this occurrence are, respectively, the knee-chest, the latero-prone and the lithotomy positions. In the non-puerperal conditions, owing to the closed canal of the cervix, the action is confined to the vagina. But in childbirth the sudden rupture of the membranes which have previously distended the vagina, or the rapid extraction of the child, may permit the ingress of air into the uterine cavity itself. Such an accident may not of necessity do harm, or the harm may be limited to the production of endometritis, but still there are recorded cases in which the occurrence has been followed by almost instant death.

In this category may be mentioned a very striking case reported by Kézmarsky,[1] of Budapest. The patient was 36 years of age, and in labor for the fourth time. An excessive amount of amniotic fluid was recognized. The patient entered the hospital at 10 A. M. At 3 P. M., as she lay upon her left side, the bag of waters was found protruding from the vulva. Spontaneous rupture occurred, and a gallon of water was discharged. Five minutes later the patient suddenly threw back her head, gasped a few times for air, the face became livid and respiration was arrested. In scarcely two minutes the clinical assistant, Dr. Liebmann, was at her side, but the pulse was extinct. An asphyxiated child was extracted with forceps, and the expulsion of the placenta followed during the tying of the cord. Meantime the heart had ceased to beat, and the woman was dead. At the post-mortem 20 hours afterward pale, reddish-brown blood, mingled with bubbles of air of large and small size were found in the veins of the uterus, in the vena cava inferior, in the left side of the heart, and especially at the orifice of the pulmonary artery. The lungs were pale, anæmic, and contained a small quantity of frothy serum. In the vena cava the blood was separated into distinct columns by intervening layers of air. Kézmarsky's explanation of the fatal issue is as follows: The patient lay upon her left side with the knees drawn up in very nearly the Sims position, with the vulva elevated above the concavity of the abdomen. As the membranes ruptured there was sudden diminution of the intra-abdominal pressure, so that the air passed through the open vulva between the collapsed membranes and the vagina to the uterus. The ensuing retraction of the uterus forced the head to the os externum, and caused partial placental sep-

[1] Wiener. Zur Frage der Künstlichen Frühgeburt, bei Eugéne Becken. Arch. für Gynæk. Vol. XII, p. 94.

[1] Kézmarsky. Ueber Lufteintritt in die Blutbahnen durch den puerperalen Uterus. Arch. f. Gynæk., Vol. XIII, p. 200. To my indebtedness to this paper I herewith make my cordial acknowledgments.

aration. The next contraction caused the intra-uterine air to escape by the only channel that was possible, viz.: by the open mouths of the placental veins.

The aspiration force of the uterus in the knee-elbow position is thus illustrated by Hegar,[1] who, misled, he says, by the brochure of Ludwig, made some experiments with labor in that position. In one case delay in the expulsion of the trunk followed the birth of the child's head. Friction was employed upon the fundus, and then the body was drawn out by gentle traction made in the axilla. As soon as the child was born a stream of air rushed into the uterus with a gurgling sound. The patient was then placed upon her back, and the air, blood, and placenta were pressed out. The patient subsequently was attacked with endometritis and metro-peritonitis, from which, however, she recovered.

By way of warning I shall take the liberty of adding to these two cases the following, reported by Cordwent in the St. George's Hospital Reports (vol. vi):

At the patient's request she remained during labor in the standing position. Suddenly the child was precipitated to the ground, dragging the entire placenta with it. Immediately thereafter a gurgling sound was heard. The woman remained standing as before, and holding at the bed-post. Then she cried out: "I see nothing; I feel faint; put me to bed." Her request was carried out, but she died instantly. Air was found in the coronary artery of the stomach, the right side of the heart was slightly inflated, and air escaped from the punctured auricle. Here Kézmarsky suggests that the sudden recession of the uterus after delivery exercised a suction force which drew the air directly into the uterus and into the uterine veins. With the body bent forward in the upright position Schatz has demonstrated the diminution of the intra-abdominal pressure.

These histories I present not as isolated instances, but as typical, and carrying with them the suggestions for the adoption of preventive measures.

The post-mortem examinations in these cases showed but little blood in the left side of the heart, frothy blood from the cut surfaces of the uterus, air in the uterine veins, the vena cava, the right side of the heart, and at the orifice of the pulmonary artery; the lungs were anæmic and contained much frothy serum; the brain was pale and infiltrated with serum. And corresponding to these conditions the hands were cold, the pulse scarcely perceptible, the face blue and livid, consciousness was lost, and the respiration was labored and jerky, with all the symptoms of intense air hunger.

In the case I have reported it is not possible in the absence of a post-mortem examination absolutely to exclude the entrance of air into the uterine vessels, for the vaginal douche was employed, and the excessive uterine relaxation might have conduced to the spontaneous aspiration of air, still such an event was improbable, for the douche was used with every known precaution, and the dorsal position was unfavorable to the direct entrance of air into the genital passage. But the special reasons for discarding such an hypothesis were first the quiet, peaceful, and undisturbed respirations of the patient, and the fact that death from air in the veins is usually sudden. When life is prolonged for a few hours the dangerous symptoms as a rule subside, probably from absorption of the air.

[1] Hegar. Sangphänomene am Unterleib. Arch. f. Gynæk., Vol. IV, p. 535.

ON THROMBOSIS AND EMBOLISM.

From this discussion I propose to exclude cases of phlegmasia dolens in which a detached portion of the thrombus in the femoral vein is suddenly carried to the right side of the heart and thence to the pulmonary artery, as this accident is one familiar to all practitioners, and occurs but rarely, if timely prophylactic measures are instituted. Death in such instances, though sudden, does not take place without warning, and lacks the element of unexpectedness which properly belongs to the class under immediate consideration. There are, however, two generally accepted forms which require closer study, viz.:

1. When the placenta is partially detached during labor, or the uterus after the birth of the child does not properly contract, sudden hæmorrhage followed by syncope or marked weakening of the heart's action may lead to the formation of large soft thrombi in the uterine sinuses, which by movement, by uterine action, or by the douche, may be set adrift and, carried by the vena cava to the left side of the heart and the pulmonary vessels, may cause extreme dyspnœa and death. That some of the reported cases of death from entrance of air into the circulation, where the diagnosis was not confirmed by a post-mortem examination, belong in this category, is inherently probable. I must, however, express my regrets that I have been unable to find a history which affords indubitable proof of such an occurrence.

2. It has been assumed, though not without question, that owing to the large proportion of fibrinoplastic and fibrinogenic substances in the blood during pregnancy and childbed, it is possible, when the heart's action is feeble, for spontaneous coagulation to take place in the pulmonary artery, and cause dyspnœa and death by obstruction of the pulmonary circulation. This theory, originally broached by Meigs, has been warmly supported by Playfair and Barker. Clinically, many striking facts have been adduced in support of this view. Playfair argues that when dyspnœa precedes phlegmasia dolens, the same causes which have led to thrombosis of the femoral vein had antecedently been at work in the formation of coagula in the pulmonary artery. But the post-mortem evidence of such a connexus is not conclusive. Dr. Mary Putnam Jacobi reported to the New York Pathological Society a death which occurred in a primipara five hours after childbirth. Two hours after the delivery was completed, the patient complained of præcordial oppression and dyspnœa. These symptoms continued to increase until the fatal termination. No lesions whatever to account for these symptoms were found at the autopsy. Her own opinion that the clots found in the two sides of the heart were formed subsequently to death,

was sustained by Dr. Janeway and other members of the Society who examined the specimen she presented. In a case reported by Dr. Playfair of sudden death occurring in a rheumatic patient, which he referred to thrombosis of the pulmonary artery, Drs. Wilks and Weber, of the London Pathological Society, reported upon the specimen as follows: "The characters of the clot are such as are not very rarely seen in cases of slow death, and there is nothing in its appearance to lead us to the belief that the clot was the cause of the death; in fact, judging simply from the specimen before us, we should have considered that it resulted merely from the diminution and gradual cessation of the heart's action." (Path. Trans., vol. xviii). Nor is it possible, when we recall the frequency with which thrombosis of the uterine veins precedes that of the veins of the thigh to be sure, in the absence of an autopsy, that the dyspnœa observed might not have been due to an embolus from a clot formed in a uterine vessel. Personally, I am far from willing to deny the possibility of Playfair's hypothesis. I only wish to state that so far as the evidence goes it lacks the positiveness of a scientific demonstration. Savage, in his reply to a paper on "Puerperal Thrombosis and Embolism," read by Playfair before the London Obstetrical Society (Trans., vol. xvi), while questioning the doctrine of primary thrombosis of the pulmonary artery, gives Virchow as his authority that "any of the few minor cardiac veins opening into the right auricle may be the seat of the primary thrombus, and give rise to a large secondary thrombus within the auricle," a fact which, if admitted, furnishes standing-ground for Playfair, and answers the objection that, excepting in the death agony, the force of the current in the pulmonary artery is such as to prevent spontaneous coagulation from taking place.

NERVE EXHAUSTION AND SHOCK.

Twenty years ago these two pathological states played a conspicuous part in the etiology of sudden death in childbirth. Now the fashion has changed. Such terms as "nervous apoplexy," or "idiopathic asphyxia," belong to an almost forgotten nomenclature. And yet none the less the necessity remains to account for a class of cases in which death takes place without recognizable organic lesions.

Instances of death attributed to heart-paralysis are to be found in the collections of McClintock[1] and Mordret[2], but to these objections have been made either that the post-mortem confirmation of the diagnosis was lacking, or that the examinations were wanting in the completeness necessary to shut out other possible causes of death. Baart de la Faille,[3] however, has more recently collected thirteen cases of collapse in which the occurrence of embolism and the entrance of air could with every probability be excluded. Cases similar to my own, where the absence of all symptoms of pulmonary obstruction furnished certain evidence that the fatal ending was due neither to embolism nor to air, may be found scattered through journal literature. As I write I find in the April number of the *American Practitioner* an account by Dr. O. T. Schultz in which an enfeebled patient was seized with deadly pallor and other signs of shock immediately after a precipitate labor occurring while the patient was at stool, the patient dying two hours later without dyspnœa.

Certainly in the absence of the visible lesions, or the characteristic symptoms of the conditions to which death in childbed is usually referred, we have the right to attribute the melancholy issue to the same causes which outside of childbed produce identical phenomena. It would be impossible to find in the annals of surgery a more striking example of the features of shock than those presented by my patient. The pinched features, the eyes sunken and surrounded by dark rings, the marble pallor of the skin, the hands and lips blue, the extremities cold, the sweat upon the brow, the thready, scarcely perceptible pulse, the shallow but not anxious breathing, with the closed sphincters, and with consciousness and sensibility preserved, present a complete picture of the torpid form of shock. As time passed by the erythetic symptoms followed; the face, with the exception of the mucous membranes, became reddened, beguiling me with false hopes; the eyes brightened, the patient became restless, bade her friends good-by in anticipation of death, and complained of constant thirst, while at the same time the pulse was too rapid to be counted, and the skin, in spite of artificial heat, never regained its normal temperature.

Modern pathological investigation refers the phenomena of shock to a reflex paralysis of the vasomotor, and especially of the splanchnic nerves, whereby the great mass of the blood is withdrawn from the surface, and collects in the large trunks of the cœliac, the mesenteric and the renal veins. Hence the skin becomes cold and is devoid of color, save at the points where a bluish hue is imparted by the stagnant blood still lingering in the veins; the muscles deprived of blood became enfeebled; and the empty vessels of the brain explain the sluggish intelligence, the nausea, the vomiting and the indifference of the patient; finally, during the diastole, the heart, pale and contracted, receives but little blood, and the radial pulse fades to nothingness, because a corresponding small amount of fluid is propelled during the systole into the arterial vessels.

From works on military surgery we learn that it is in the defeated army among homesick soldiers, at the close of a wearisome war after great exertions and deprivations, that shock is developed in its severest forms; that the finer the organization, the more readily the manifestations occur; that they are promoted by sudden losses of blood, and are in a special degree evoked by abdominal injuries.

It certainly would be singular if similar conditions in childbed were not followed by similar results. After prolonged labor, the woman has her nervous system depressed by pain, starvation, and deprivation of sleep. The sudden emptying of the uterus is followed by a recession of blood to the venous trunks of the abdomen. Hæmorrhage subsequent to parturition is followed by syncope, and the wonder is, not

[1] McClintock. Dublin *Med. Press*, 1852.

[2] Mordret. Mem. Acad. Med., 1858.

[3] Baart de la Faille. I have only had access to the synopsis of these cases to be found in the Mon. Schr. f. Geb. Kunde. Vol. XXV, p. 318.

that the circulation should occasionally show the evidences of marked, and even fatal disturbance, but that the nervous system attacked from so many directions, should, as a rule, triumph over the adverse forces. In the old days of torture, shock often mercifully put an end to the victim's anguish. Women in childbirth are at times subjected to pain exceeding that of the rack and the thumb-screw. Now it is not sound pathology to ignore these facts, and to banish as unworthy of consideration a well established pathological condition, simply because in the days of ignorance the terms exhaustion and shock were indiscriminately employed to explain a multitude of cases, which, with our present enlightenment, we know are due to the entrance of air into the circulation and to pulmonary embolism. As the nervous organization of women loses in powers of resistance as the penalty of a higher civilization and of artificial refinement, it becomes imperatively necessary for the physician to guard her from the dangers of excessive and too prolonged suffering. Especially I would raise my voice in warning against the current opinion that the length of the first stage of labor before the rupture of the membranes is a matter of indifference, a teaching which I believe has cost the lives of many women; in a few, death resulting from shock; in more, the exhausted condition in which the woman is left after childbirth rendering her an easy prey to the perils of the puerperal state.

THE THERAPEUTIC USE OF MINERAL WATERS.

BY NORMAN BRIDGE, M.D.,

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It is always a question how much of the benefit experienced by invalids who visit springs and water cures is due to the water and how much to the change of air, scene, occupations, diversions and living. Doubtless both are important. That much is due to the change must be evident to any one who has observed the remarkable effects upon a chronic invalid of a vacation from effort and a journey from home. A few weeks spent out of the usual routine of cares and perhaps drudgery, in rest and amusement, will nearly always put new life into the chronic invalid not yet past recovery or improvement. But the water drank and the baths taken are often, and may nearly always be, of great advantage to the sick. Invalids make all sorts of mistakes in the use of both, often drinking too much or too little water, and taking too many baths or too few, or at improper times and in the wrong way. But, with all their mistakes, they receive a balance of positive benefit whose value it is impossible to calculate. Moreover, they receive benefits that no one from a study of the chemical analysis of the waters would expect. Nor can the help derived always be explained by any known effects of the chemical ingredients of the water in any doses or taken in any way. Artificial compounds made to imitate as nearly as possible the composition of the natural waters have frequently failed utterly to produce the same effect on the sick.

Mineral waters are therapeutic agents; they cannot all be used with benefit in the same way nor in a given state of system, and care and judgment are required in their use as in that of other therapeutic agents.

The different kinds of mineral waters. Waters may be classified as well as foods or drugs or clothes, but none of the classifications in vogue are entirely satisfactory. Waters in which the alkaline carbonates predominate are called *alkaline waters*. There is usually the greatest proportion of the carbonate or bicarbonate of sodium; in lesser quantities are the corresponding salts of potassium, calcium and magnesium. Other elements may enter which vary the therapeutic capabilities of the water, as sulphate of sodium and potassium, iron, etc. The milder waters of this class are diuretic in their effect, without irritating the kidneys or urinary passages. Of such springs are the Ems, Vichy, Apollinaris.

Saline waters, so-called, are mostly alkaline waters, but contain chloride of sodium in marked quantity. They affect the organism much as the pure alkaline waters do, only if the common salt is in large proportion, the waters are cathartic. The Saratoga springs —a dozen or more in number—are of this class, as are the Kissingen, the Selters and the springs of Manitou, Colorado.

Purgative waters contain the alkalies and the common salt in varying proportions, and in addition, Epsom or Glauber's salts or both, and in quantity sufficient to make them more or less cathartic. Of such are the Carlsbad in Bohemia, the Crab-Orchard in Kentucky, the Hunyadi-Janos in Hungary, and the Pagosa in Colorado.

Chalybeate waters contain, among many other ingredients of differing value, iron in tonic quantity. The Sweet Chalybeate Springs of Virginia, the Pyrmont of Germany, and the St. Moritz of Switzerland are examples.

Sulphur waters, many of them, resemble very closely waters of the other classes named, but they are distinctive in containing sulphur in the form of sulphuretted hydrogen, or sulphuret of sodium, calcium, potassium or magnesium. The Blue Lick Springs of Kentucky, and the Aix-les-Bains of France are good examples of this class.

Hot springs give forth water varying in temperature from 90 to 150° Fahr. Some of them contain minerals that make them valuable on that account, some are indifferent as to minerals and depend for their value entirely upon the heat, and are used chiefly or entirely in the form of the bath. The Carlsbad are mineralized and the Hot Springs of Arkansas are indifferent waters of this class.

The Calcic or Alkaline Calcic waters, so-called, are but slightly mineralized. The predominating element is some calcic salt, but they all contain more or less of the alkaline carbonates or bicarbonates and most of them some carbonic acid gas. They are nearly or quite tasteless, and their effect on the sys-

tem is in general that of an unirritating diuretic. The Contrexville, Leuk, Wildungen and Bagnères-de-Bigorre waters are old and the Waukesha waters new examples of this class.

Diseases likely to be benefited by mineral waters. Only a few of the many diseases that afflict mankind are susceptible of relief by the use of mineral waters. These are now fairly well understood, and although few, they make a list that is somewhat formidable. The following are among the more notable of them:

1. *Debility* and the digestive and assimilative disturbances attendant upon it. Victims of these conditions are numerous among men and women who work with brain or hands and who have cares. They are the drudges of all sorts who are ever improved by a vacation and whose indigestion and malassimilation always disappear upon an increase of vigor. Some of them are the *anæmic*, bloodless subjects of blood losses and wasting discharges of pus, and who lack recuperative ability; some are chlorotic.

2. The large class of diseases and disorders of the *digestive apparatus*, including: catarrh of the stomach, duodenum and bile ducts; formation of gall stones in the liver, bile ducts and gall bladder; catarrh of the intestines, with alternations of diarrhœa and constipation; constipation and hemorrhoids. From these conditions result perhaps every symptom ever ranged under the designation of dyspepsia.

3. Various *rheumatoid affections*. These are: gout (rare in this country); chronic rheumatism and rheumatoid arthritis or rheumatic gout; muscular rheumatism, and many cases of obstinate neuralgia, including some of sciatica.

4. *Syphilis*, not primary.

5. Certain diseases of the *skin*, such as eczema, psoriasis and pityriasis.

6. *Acute* febrile diseases in which there is a tendency to nephritis, albuminuria, and irritation of the urinary organs from deposits of solid matter from the urine, and from the concentration of this secretion incident to the fever state.

7. *Diabetes mellitus*—perhaps and probably.

8. *Disorders of the urinary apparatus*. Among these are inflammations of the kidneys (certain forms of Bright's disease), inflammation of the pelves of the kidneys, with or without gravel as a cause or a result, inflammation of the ureters and bladder—including catarrh of the bladder in all its multifarious shapes and degrees of severity.

The use of mineral waters in disease. Every chronic invalid who desires to get the best effect from the powers of the springs, should, if possible, visit them and drink the waters there. The change of life involved in such a visit will prove of great benefit, in addition to the good effect of the water.

The patient with *debility* from overwork or overworry, with some *indigestion and derangement of the bowels*, should have a radical change of diet. He should discard all condiments, new bread and pastry, and eat the most digestible and nourishing food, such as milk, stale bread with butter, eggs, oysters, tender meats, plain vegetables and fruits. He should eat slowly and without fluids to "wash down" his food, and the quantity of the food should be restricted to what can be digested without discomfort.

In choosing his mineral drink he should take a mild alkaline water, either a plain alkaline, or one in which the saline or purgative elements slightly predominate. It must never be strongly alkaline nor strongly purgative, either from the chloride of sodium or the purgative salts.

If the conditions of the case and the character of the water will allow, he should take the water in rather large draughts, for the purpose of securing to some extent a diuretic effect, and to wash out the stomach. If in any case the stronger waters are used, particularly the laxative varieties, of course only a limited quantity can be drank. Yet a slight laxative effect is not objectionable, and is usually desirable.

When the bland waters are taken constipation sometimes occurs. This must be prevented in some way, and a very good way is to add to the morning draught the old-fashioned pinch of salt, or what is much better a pinch of some saline mixture which the physician may prescribe. Such a mixture would need to be varied according to the case, but it should always contain a major proportion of the sulphate of sodium. The patient will soon learn the dose of the mixture that is necessary for his case. No violent or prolonged purgative effect should be permitted.

Patients with *anæmia* and *chlorosis* should be advised to drink an alkaline iron water of only moderate strength, or a mild laxative alkaline water. Waters altogether too strong of iron are often taken by such patients. Chalybeate waters are liable and likely to aggravate any existing congestion of the liver or duodenum, and for this reason they are contraindicated in many cases of malarial anæmia, in which condition such congestions are common. All anæmic patients should have every aid of rest, recreation and change, with a most nourishing, digestible and full diet. Constipation and purgative effects are equally damaging to such cases.

Catarrh of the stomach of the usual form nearly always improves on the use of the alkaline, saline-alkaline or alkaline-purgative waters, with some rest of the organ. The amount of water proper to be taken is, to a certain extent, in inverse ratio to the concentration of the minerals. The bowels must be made to act rather freely, by the water unaided or by some mild laxative.

Catarrh of the duodenum and bile ducts improves on the use of the same class of waters, but a considerable admixture of sulphate of sodium (Glauber's salts) with the alkalies, is of advantage, particularly to the catarrh and congestion of the bile ducts and liver, the jaundice sometimes resulting and the tendency to the formation of gall stones. It is doubtless this salt that gives much of its value to the world-famous Carlsbad waters. If, in chronic cases of the last named disorders, the weaker alkaline waters are selected and anything like constipation should occur, benefit will be found in the addition of an artificial mixture of saline substances such as already suggested, with this difference, that the bicarbonate of sodium as well as the sulphate should enter quite largely into its com-

position. Chalybeate waters usually disagree with these patients, and should not be advised. Many cases of this class of ailments are caused by too much alcohol or some other stimulant, by over-eating or by some other abuse. Such cases are frequently called engorgement of the liver, and they seek the spas abroad and the springs at home in great numbers. A rigid adherence to a simple, unstimulating, and, unless there is debility, a rather low diet, must be insisted on with all such patients. This, with a prolonged use of the alkaline waters, will generally be followed by marked relief. Patients often feel so much improved after a short course of this treatment that they believe themselves to be well, and, returning to their old ways, are soon as bad off as ever. Nothing but patience in the regimen and prolonged use of the waters, or a frequent return to them, will give anything like permanency to the recovery. Many of these patients are plethoric, and can use waters much stronger in alkalies and purgative salts than the anæmic; for the latter the milder waters are preferable. The mistake is often made with the anæmic patient of trying, by violent purgation, to cure a congestion of some of the organs referred to, while the anæmia is growing worse. This is a serious mistake indeed, and it reminds one of a great French surgeon and his female patient with a bad skin disease. He gave her such powerful alteratives that, as the eruption grew less the patient did also, and finally died just as the eruption was disappearing, whereupon the surgeon triumphantly declared that "she died cured."

Jaundice, in the majority of cases, is due to catarrh or inflammation of the duodenum and bile ducts; hence, the relief of these possible conditions is the first thing to be thought of in connection with the treatment of icteroid troubles.

Catarrh of the intestines without constipation will experience more benefit from the mild alkaline or the alkaline-calcic waters than any other, unless there be also anæmia, in which case the element of iron as found in some of the mild chalybeate waters will be a good addition, provided it does not happen to cause constipation. A strong chalybeate water is likely to do this.

Obstinate constipation is benefited by the purgative waters taken regularly, a draught, large or small as required, daily before breakfast. In choosing water for this purpose, it is well to remember that the sulphate of sodium has a better effect on the intestinal mucous membrane than the salt of magnesium.

Hemorrhoids are relieved to a certain extent by anything that relieves or prevents constipation.

The chronic rheumatoid affections referred to are all susceptible of more or less relief by the free and prolonged use of the rather strong alkaline waters, particularly those that are laxative. In some cases, however, the milder waters seem to work better, but there is always benefit in a free action of the secretory organs, especially the skin, intestinal canal, liver and kidneys. Full function of the skin and kidneys may be maintained longer and more continuously by the milder alkaline waters than by any other. To do this rather large quantities must be drank and they may be taken continuously for an indefinite time. The body must be kept scrupulously warm at all times with woolen clothing, and wool or silk should be worn next the skin. Greater benefit than comes of drinking the water is derived from a long course of hot baths at the springs. It is not important that the water be mineralized; the indifferent thermal waters work quite as well as any. The product of the Hot Springs in Arkansas is an indifferent water, yet the resort is justly famous for this class of disorders. It is essential that the baths be taken regularly and for a number of weeks continuously. They must be of a uniform and high temperature and the air of the bath-rooms must be hot. It is next to an impossibility to attain all these conditions at the home of the patient, and they are rarely secured by a patient except at the springs. The bath treatment should always be directed as to all its details by a physician.

Syphilis, not primary, is benefited by hot air, hot climate, and hot baths, and the Arkansas resort has a great reputation in its treatment. Improvement occurs in most of the cases that resort to the baths faithfully, but most of the patients take large doses of the alterative medicines of mercury and iodine, while under the bath treatment, so that the results cannot all be attributed to the effects of the latter.

In using mineral waters for diseases of the *skin*, discrimination and care are necessary and it should be done under the advice of a physician. Eczema in certain forms, lichen, psoriasis and impetigo have been relieved by the waters. The sulphur and saline sulphur waters have seemed to do best, but if any catarrh of the stomach exists, which is not unfrequently the case, an alkaline water should be selected. Many cases of chronic skin disease have recovered at the springs, solely through the correction of some disorder of the internal excretory, or the assimilative organs, which had acted as a cause.

Mineral waters are generally supposed to be unadapted to *acute diseases*, or to do them positive harm. This view is irrational. Certain acute disorders receive the greatest benefit from laxatives, and a form of laxative medicine very grateful to many patients is such mineral waters as the Hunyadi, the Püllna, or the Friedrichshalle. To many fever patients the mild carbonated waters are extremely refreshing, and for the nausea and gastric irritability with which the sick are often annoyed, they frequently prove more soothing than anything else.

Such acute febrile diseases as are often attended by congestion of the kidneys and albuminuria may receive considerable benefit from the unirritating diuretic waters. They are grateful to the patient, cause probably an increased discharge of effete matter by the kidneys, dilute the urinary solids and render the passages more safe. The bland alkaline or calcic waters, with a touch of carbonic acid gas, will be found to agree best with such cases.

The water slightly carbonated is more grateful than the plain water, and the carbonic acid gas in small amount is oftentimes soothing to the stomach. Large doses of the gas are irritating. The charged waters as they come from the bottle are often too highly carbonated for a sensitive taste; they are too pun-

gent. When this is the case the water may be allowed to stand for a time exposed to the air to allow part of the gas to escape before using, or it may be briskly stirred with a spoon for half a minute. The patient will easily learn the proportion of gas that pleases him.

In *diabetes mellitus* the alkaline calcic waters may be taken freely, or the milder saline waters less freely, as a palliative. But the patient must subsist on the regulation anti-diabetic diet. Little hope of recovery need be entertained if ordinary diet is used.

Most of the *disorders of the urinary apparatus* are at beginning, and chiefly, irritation or inflammation of the mucous surfaces that are concerned in secreting the urine, in conveying it, in storing it for a time and finally in expelling it from the body. One of the first requirements in the proper management of such affections, is to put the disordered parts at rest and guard them from all irritating influences. Here rest of the parts is only to a very limited degree possible. Efforts must be mainly directed to relieving them from irritation. One of the first steps is to keep the skin uniformly warm, so that a large amount of blood may be retained in the surface of the body, and congestion of the deep organs be prevented. The general health should be maintained in a good condition, that the urine may be as nearly normal as possible. This principle is cardinal, since many of the diseases of the urinary organs are induced directly by the urinary aberrations of general ill health. Another thing to do, and that should never be omitted, is to decrease the irritation of the surfaces due to the urine, by diluting the solid matter thereof. Here is a means of some relief always within reach, and the wonder is, and the regret, that it is not always resorted to. Irritating substances in the urine, and substances irritating solely because they are in a concentrated state, may be made at once innocuous by the free dilution with water that a diuretic action produces. The employment of mineral water for ailments of the urinary apparatus, should be in this direction. Repeated and large draughts of the bland waters may be taken daily for a long time and with uniformly good results, particularly if the general health can be maintained, and the patient be under conditions of good hygiene. The waters adapted to such cases are the unirritating diuretic waters, the mild alkaline or alkaline calcic fulfilling this indication best.

In Bright's disease bodily exercise must be reduced to a low point for the purpose of lessening the labor of the kidneys. A restricted and very digestible diet should be taken, milk being one of the best foods. If the diet is restricted to this article and a large quantity be taken a diuretic action is induced not unlike that caused by the blander waters—the kidneys are, as has been said, washed out and their tubules are flushed. This is the purpose of the waters—to wash out, to flush the kidneys. Here hot baths are useful, but they must be used so as to increase the secretory action of the skin and keep it up to a high point of efficiency. The surface of the body must not be chilled; this is not enough—the possibility of chilling it must be prevented. Hence, hot air and hot water, warm air and warm clothes must be the rule.

Owing to the great danger of disturbing injuriously the circulation in the kidneys in Bright's disease by a chill of the surface, it is unsafe for the patient to attempt to direct his baths himself. They should be taken under the direction, or better, under the observation of the physician.

How to drink mineral water. Do not drink it very cold unless it is a strong water and the dose is small. The milder waters must be taken in large doses (4 to 12 or more glasses daily) and should be drank cool, tepid or hot, never cold, as this might hurt the stomach and retard absorption. Many of the stronger waters, especially those that have an unpleasant taste, may be best drank hot, and, indeed, in the catarrhs of the upper abdominal portions of the digestive tube and in nearly all those conditions that go by the name of dyspepsia there is often great advantage in drinking the waters hot.

The water should in every case be taken slowly; several minutes should be given to each glass. With this precaution, several glasses may often be taken in succession without harm. The best time to drink is before a meal, especially before breakfast and supper. A meal must not immediately follow large draughts of water; half an hour at least should intervene. If any bad effect, like a sense of discomfort or fever should come on while using a water in large doses, reduce the daily quantum at once or stop it for a while altogether.

No discomfort at the stomach should be allowed to follow the taking of even moderate potions of the waters. If such should occur an effort must be made to learn the reason of it. Perhaps the water is taken too hot or too cold, too rapidly or in too large draughts, at the wrong time of day or in wrong relation to a meal. If the cause cannot be discovered and the difficulty corrected, the water is not adapted to the case and should be abandoned.

In this brief synopsis only a few of the more important facts and considerations regarding this interesting subject could be given; much has been omitted that might be said on the subject of baths, partly because much must be omitted and partly because the taking of baths, while often and best done at the springs, is nevertheless not so much a use of mineral water as it is a therapeutic use of hot water and air. Certainly the omission will not be taken as indicating any lack of appreciation of this valuable therapeutic measure.

CHOLERA---ITS DISASTROUS PAST AND ITS MORE HOPEFUL FUTURE.

BY H. RAYMOND ROGERS, M.D., DUNKIRK, N. Y.

The absolute failure in the past to read aright the clearly defined symptoms of this disease has left it, as found to-day, one of the most obscure and incomprehensible of all diseases. The wrong reading of symptoms is indicated by the fact that the rate of

mortality is virtually the same, whether nature alone is trusted for the cure, or whether the treatment is according to the best lights in medical science; viz.: 50 per cent. of those who are attacked.

Such being the fact, it is discreditable, not to say criminal, longer to entertain the theories or to employ the modes of treatment belonging to such a past. Our profession will be held to a rigid accountability by a world of growing intelligence. This disease will be studied by those outside of the profession who have faith in a better state of things as being possible.

The hope for better results clearly depends upon our breaking loose from old traditions, old theories, old systems, so as to be able to read the disease in the pure, simple light of its actual symptoms, and its well-known cadaveric autopsies. Then will the essential character of the disease be discovered, and at the same time its rational and successful treatment.

The fact that persons are attacked and die in the brief space of 20 or 30 minutes, proves that the fatal blow is expended upon the brain and nervous system. The malaise preceding the active stage of the disease, and the accompanying sense of prostration, add confirmation to this hypothesis. It is plain that the general nervous system is implicated, thus demonstrating that the disease is essentially *a neurosis*.

The rice-water discharges derived from the watery element of the blood constitute a true hæmorrhage. The brain and heart are thereby suddenly deprived of their natural stimulus. The rapid escape of a single element of the blood becomes disastrous, in the same manner as when the full blood is lost in the more ordinary forms of hæmorrhage. Such is the essence of the disease. But, owing to the failure to discriminate between the functions of the red corpuscles and the white discs, the two chief constituents of the blood, this philosophy has not been applied in its explanation. The vital force depends upon the red corpuscles, for through them chiefly is the oxygenation of the blood and consequent revitalization of the system. A small loss of this element is often speedily fatal. On the other hand, the serum or white element constituting the bulk of the blood apparently possesses less vital functions, and its abstraction becomes neither so quickly nor so seriously apparent. Enormous quantities are sometimes separated from the circulatory current without fatal consequence. The disregard of the true hæmorrhagic character of these discharges may account for the strange misconceptions that have heretofore prevailed.

The theory herein asserted, that cholera is essentially a neurosis—that its leading phenomenon is a true hæmorrhage, is incontrovertible, if any reference be made to actual conditions observed during or following an attack of the disease. Autopsy shows nothing which may not result from loss of the watery element of the blood. The so-called cholera microbe of Koch is now found *where cholera does not exist*, and, too, as Dr. Koch informs us, *in other epidemic diseases*. All diagnostic or therapeutic significance is removed from this microscopic object, as well as all scientific importance. The fact that these microbes have escaped the observation of such distinguished microscopists as Hayem, Thudicum, Macnamara, and Bruberger, who number their autopsies by hundreds each, and a host of others of rare skill, whose investigations in this field were continued through long periods with infinitely better opportunities, shows them to be simply occasional concomitants of the disease, rather than its cause.

Assuming the correctness of the foregoing theories, the principle of treatment becomes unerringly determined, viz.: such treatment as is indicated in other forms of active hæmorrhage, with this important distinction—*i. e.*, the cholera hæmorrhage demands a vigorous watchfulness and attention, such as is rarely called for in its more common sanguineous forms.

It is essential to the healthy physiological action of the brain, that it be supplied with currents of blood normal in constitution and in full measure. The sudden disturbance in its equilibrium, in either of these respects, is capable of producing sudden and sometimes alarming or fatal effects. The pinched visage, sunken eye-balls, lusterless eyes, burning thirst, hoarse voice, washerwoman's hands, suppressed urine, cold extremities, and the voiceless yet speaking cadaver, all tell the story of emptied blood-vessels and a depleted brain. These conditions necessitate a speedy re-supply for the brain and heart. This can be accomplished only through the instrumentality of gravitation—*by position*. Let it therefore not be forgotten that the treatment of cholera resolves itself, in a measure, into a simple problem in mechanics—in hydraulics—upon the principle that water (or blood) tends to run down hill. This philosophy is emphasized in the fact that the loss of blood which, in the upright position, would quickly produce syncope or death, would scarcely be heeded in the horizontal position. *Position* thus becomes the fundamental consideration in the treatment of this disease—horizontal in mild cases, or inclined, with the head lowest, in grave attacks. We have reason to suppose that position alone would save a large proportion of the cases which otherwise would prove fatal. In severe attacks the inclination of the body should be strictly maintained until reaction becomes established. Murray tells us that "once sitting up in bed sometimes causes death in this disease." It should be well understood that no diarrhœa is harmless during a cholera epidemic. At such a time painless diarrhœa or vomiting are signals of danger. No attack, however mild, is free from the danger of suddenly and without warning passing into its gravest form. The obscurity incident to concealed hæmorrhage in this disease necessitates watchfulness, as death has at times been sudden, and the bowels found plugged with hardened fecal concretions and filled with rice-water secretions. The contents of the bowels being liquid, act upon the sphincter ani by gravitation, and thus mechanically provoke catharsis; this necessitates the horizontal position.

Medication through the medium of the stomach cannot be relied upon in the treatment of cholera except in its earlier stages. At a period more advanced the physiological action of the mucous membrane becomes suspended, or reversed, and absorption no longer takes place. Hypodermic medication then becomes our surest reliance. Morphia, the king of

nerve-remedies, becomes our most efficient agency. While morphia in small quantities is of the highest value, yet, it cannot be too strongly impressed upon the mind that this drug has peculiar dangers when employed in the more advanced stages of the disease. Chloroform is of great value applied either by inhalation or internally. Opiates in any form are useful in guarded doses. Ice, *ad libitum*, or coldest water in small quantity, frequently repeated, also friction and external warmth, are *indispensable*.

As this disease is a neurosis and therefore mainly affects the general nervous system, any influence which is depressing to that system not only leaves it open to invasion, but actually invites attack, and often determines a fatal issue. Fear is the most potent nerve-depressor, and thus becomes its principal exciting cause and most fatal agency. In no other way is so wide-spread terror and depression generated and propagated as through the published press reports. The eagerness with which the public mind fastens upon anything which gives information as to the cholera, is phenomenal. The press cannot, therefore, too soon come to the full realization of the vast power which it exercises in determining the results of an epidemic, and the consequent necessity of caution in referring to the subject during its actual invasion.

National, State and local Boards of Health would promote the great cause which they represent by officially suggesting the value and importance of position as an element in the management of this disease, and by urging its early adoption in all cases of attack.

The foregoing theory of cholera and suggestions of treatment are simple—not the children of scientific imagination, nor are they due to the skillful construction of the theorist. They embody the results of a careful study of the disease both at home and abroad during the past 33 years, and an experience in its treatment in every epidemic since 1851, also a personal experience of its effects.

As a demonstration of the good effects in part due to the operation of this system, I may add that in all the cases in which it has been followed under my observation, 13 in number, the result has been favorable. The cases, although sporadic, were typical, and several of them were of the gravest character.

A concise description of a single case may be interesting and instructive.

Mr. A. was attacked by cholera in its gravest form. When first seen the pulse was only perceptible, and numbered 140. The prostration was extreme. His condition was such that morphia was inadmissible. The only hope in the case appeared to be in position. The body was inclined with the head lower than the feet—ice, warmth and frictions were employed and chloroform administered by inhalation for the relief of cramps. At the end of one hour the pulse had slightly increased in firmness, thus warranting the application of ⅙ of a grain of morphia hypodermically. This was repeated at long intervals. The result, recovery. This case was the first in which I recognized the vital necessity of a position inclined, with the head the lowest, as an element in the treatment of this disease. It is reasonable to suppose that life in this instance depended upon the adoption of this expedient.

We offer the preceding philosophy of this disease as one capable of explaining its phenomena in a clear and rational manner, and as meeting the indications for treatment by a method at once simple, rational, and consistent.

Its crucial test may be found only in the results of treatment when applied under all conditions and circumstances of the disease. The problem, therefore, remains for future solution.

MEDICAL PROGRESS.

MATERIA MEDICA AND THERAPEUTICS.

THE PASTE TREATMENT OF INFLAMMATORY SKIN DISEASES, ESPECIALLY ECZEMA.—Dr. P. G. Unna, (Monatshefte fur Praktische Dermatologie; Edinburgh *Med. Jour.*) finding the greasiness and expense of ointments to be strong objections to their use—found that he could use a kaoline paste to advantage, and soon found that lead, starch, dextrin and gum pastes, might replace the kaoline paste. A good paste should be quickly and easily spread as a thin layer on the skin, and should spontaneously form in a short time a dry, firmly adherent coating.

Kaoline pastes.—Pure kaoline, with vaseline or glycerine in equal parts, with oils such as olive, almond, linseed in the proportion of 2 to 1, will produce a good paste. With more linseed oil a liniment is produced. This spread on extensive surfaces leaves a quickly drying residuum. When other ingredients, such as acetate of lead or oxide of zinc, are used, the kaoline and oil or glycerine are first to be mixed, and then the lead or zinc added, as the kaoline and the mineral are otherwise apt to form an insoluble cement. A suitable paste for eczema is this:

℞ Kaolini puri.
Ol. lini (v. glycerini).....āā 30-0
Zinci oxidi.....
Liq. plumbi subacet.....āā 20-0

Instead of white kaoline, the yellow or red is occasionally preferable for pastes for the face. The kaoline pastes are not merely suitable for the treatment of all kinds of eczemas, erythemata, and intertrigines, but are also suited as vehicles for strongly oxidizing, reducing or caustic remedies.

Lead pastes.—Boil a quantity of litharge with double the quantity of vinegar till the vinegar has evaporated, and the litharge has been transformed into a moderately damp paste. Should the paste become dry in time, it can be heated up with a fresh quantity of vinegar. This paste possesses considerable exsiccative power.

℞ Lithargyri subt. pulv.....50-0
Aceti.....80-0
Boil to the consistency of paste and add
Ol. lini (v. glycerini, v. ol. olivæ)..10-0

Starch pastes.—Here the property of drying must be imparted by the addition of some tempering material, as oxide of zinc, sulphur, etc. The following forms a good starch paste for eczema:

℞ Zinci oxidi.....50-0
Acid salicylici..... 2-0
Amyli oryzæ.....15-0
Glycerini.....15-0
Aq. distill.....75-0

Mixed directly and all heated at once to 140-0.

Starch paste for acne:

℞ Sulphuris precip.....40-0
Calcis carbonat..... 2-0
Zinci oxidi.....20-0
Amyli oryzæ.....15-0
Glycerini, ...20-0
Aq. distill.....75-1

M. boil to.....120-0

Dextrin pastes.—It is recommended to use the official pulverized dextrin.

For eczema:

℞ Zinci oxidi..... 40-0
Dextrini.....
Aq. distill.....āā 20-0
Glycerini..... 40-0
Sulphuris sublim. (v. natri sulpho. ichthyolici)..... 2-0

M. boil to a paste.

For freckles:

℞ Zinci oxidi..... 10-0
Bismuth oxychloridi..... 2-0
Hyd. perchloridi..... 0-2—0·5
Dextrini.....
Aq. distill.....āā 10-0
Glycerini..... 15-0

M. boil to paste.

If hard, a few drops of hot water renders the paste easily spread.

Gum pastes.—For eczema when chronic in children:

℞ Zinci oxidi..... 40-0
Hyd. oxid rub..... 2-0
Mucilag. acaciæ.....
Glycerini.....āā 20-0
℞ Cretæ preparat.
Sulphuris sublim.....āā 2-0
Picis liquid..... 8-0
Amyli..... 20-0
Mucilag. acaciæ.....
Glycerini .....āā 15-0

For scabies:

℞ Zinci oxidi..... 40-0
Bals. Peru..... 20-0
Mucilag. acaciæ.....
Glycerini.....āā 30-0

In chapped nipples:

℞ Sacchari albi.....
Zinci oxidi.....
Mucilaginis acaciæ.....
Glycerini.....āā 5-0

The gum pastes suit well as excipients for chrysarobin and pyrogallic acid. They cannot be employed as vehicles for acids, since these destroy their adhesiveness. Oily substances can be incorporated with them.

Endeavors to find such pastes, which can be kept ready prepared in bulk, have not so far been crowned with success. The addition of glycerine and oil does not hinder them from drying up in time, and the better the paste, that is, the more rapidly it dries when applied to the skin, the more quickly it perishes when kept. But by these pastes a commonly felt defect in our medication is filled up and a suitable method of employing various active drugs is presented, as for example: *Lead* can be best employed as acetate in the simple lead paste or in combination with the dextrin paste; with both all other preparations of lead mix well, as the carbonate, the oleate, and the iodide. *Oxide* of *zinc* appears as a subordinate ingredient in the kaolin and lead pastes, as a principal element in the starch, dextrin, and gum pastes. *Sulphur* suits the starch, dextrin, and gum pastes, is less compatible with the kaolin, and not at all with the lead paste. The preparations of *ichthyol* suit for all except the gum paste. *Tar* suits better for the starch, dextrin, and gum than for the kaolin and lead pastes. *Naphthol, carbolic acid, chloral hydrate,* and *camphor* can be incorporated with all the pastes. *Salicylic acid* mixes well with all the pastes, unless with the gum paste, in large proportions. *Iodine* and *iodoform* suit for the lead, kaolin, and gum pastes, not for the starch and dextrin. *Corrosive sublimate, calomel, red and white precipitate,* can be incorporated with all the pastes. *Chrysarobin* and *pyrogallic acid* suit best the kaolin and gum pastes. Animal, vegetable, and mineral fats and soaps can be mixed in small quantities with the pastes without injuring their properties, but not in large amounts.

Pine Baths.—*The Midland Medical Miscellany* tells us of the practice at some of the watering-places of Germany of using pine baths as highly beneficial in kidney diseases and for delicate children. The bath is prepared by simply pouring into the water about half a tumblerful of an extract made from the fresh needles of the pine. This extract is dark in color and closely resembles molasses in consistency, and when poured into the bath gives the water a muddy appearance with a slight foam on the surface. The repugnance one feels to enter into such a muddy looking fluid, is dispelled as soon as the delightful aroma which arises from the bath is inhaled. Although there may be some doubt whether pine baths act upon the system in any other manner than as a tonic, still, as an adjunct to the daily bath, infusion of the pine extract induces a most agreeable sensation. It gives the skin a deliciously soft and silky feeling, and the effect upon the nerves is quieting. The extract when properly bottled and securely corked, will not deteriorate for a long time, and the cost for gathering the pine needles and extracting their tarry substance is not very great.

It has long been recognized that the atmosphere of pine forests has an invigorating and beneficial effect upon people with weak constitutions and suffering from pulmonary disorders. A very simple prescrip-

tion of the physician is that the patient should spend several hours a day walking or riding through the pine wood.

To this we would add that the amusement of ladies and children at such places, of stuffing pillow cases and sofa cushions with these pine needles, and particularly with the strippings of the spruce, should be encouraged as taking them out of doors into the very midst of the pines, with healthy exercise, and saturating them with the aromatic principle of the trees. The pillows and cushions are reasonably soft and retain the aroma for a long time, to the pleasure and possible benefit of both the invalid and the healthy.

ON THE ACTION OF CARBOLIC ACID, ATROPIA, AND CONVALLARIA ON THE HEART OF THE TERRAPIN AND FROG.—Dr. H. G. Beyer, U. S. N., has been conducting a series of experiments on this subject, the results of which are given in the Proceedings of the Naval Medical Society. His experiments on carbolic acid show: 1st, that carbolic acid, in small as well as large doses, acts as a depressant on the heart from first to last, reducing its rate, its work done, and the blood pressure; 2nd, that the heart, as long as it is supplied with good oxygenated blood, will, up to a certain degree, show what almost amounts to an immunity from the poisonous effects of the drug; 3rd, that any effects produced by carbolic acid other than depressant are due to other causes, probably to primary stimulation of the respiratory centre in the medulla oblongata.

His experiments on atropia show: 1st, that after the heart has been carbolized, atropia increases its rate, and also its work; 2nd, it shows a more rapid recovery takes place after carbolization under atropinized blood than under normal blood. He believes with H. C. Wood that atropia must have a very powerful stimulant action upon the intra-cardiac accelerator centres.

His experiments with convallaria maijalis were mainly with the glucoside convallamarine and showed: 1. Increase of heart-rate. 2. Slight increase in work done. 3. A raising of intracardiac and aortic pressure. 4. Both auricles and ventricles arrested in systole when medium doses were used. 5. Large doses arrested the heart at once. 6. It produced its results most probably by its direct action on the muscular substance of the heart. 7. Has a decided cumulative action, acting much slower than digitalis, and is much more persistent after the heart is once under its influence. He deduces from these results that convallaria is counter-indicated in advanced cases of cardiac disease, in which the muscular structure of the heart has undergone degeneration. Convallamarine should be used in preference to any other preparation. Not more than one full medicinal dose should be given daily on account of the cumulative action of the drug.

INJECTIONS OF CITRATE OF IRON IN CHLOROANÆMIA.—*El Siglo Medico* recently published the description of an interesting case of chloroanæmia cured by hypodermic injections of citrate of iron. The patient had presented symptoms of chloroanæmia since 1879, and had become excessively reduced in weight. It was determined to give dilute hydrochloric acid in gtt. viij doses, and at the same time hypodermatic injections of citrate of iron in the proportion of grs. xxx to f℥ v of water; ♏xv to be injected in different parts of the body every day. After forty injections the morbid phenomena disappeared, and the patient had gained over twenty pounds.—*Midland Med. Miscellany.*

MEDICINE.

RELATION BETWEEN AFFECTIONS OF THE EYE AND LESIONS OF THE TEETH.—The *Recueil d' Opthalmologie* (*Jour. de Med.*) gives a résumé of a work by Prof. Power relative to this question, which has been but little studied. These relations are various in their character, and act either upon the muscular fibre, upon the cornea, or upon the optic nerve, the retina and the intra-ocular tissues.

One of the most common affections produced by dental diseases is the weakening, or even the loss, of the power of accommodation of the eye. This influence seems to be more marked in young subjects than in those that are older.

These reflex phenomena may also act especially upon the fibres of the iris. Desmarres cites the case of a patient who was cured of a mydriasis by the extraction of a carious molar tooth. Exophthalmos with glaucomatous phenomena has also been noted in connection with carious teeth, and has disappeared after their extraction. Von Graefe has given a case of blepharospasm which was produced in the same way.

The influence of carious teeth is also very often shown upon the conjunctiva and the cornea. Phlyctenular ophthalmia is very often associated with these alterations. Almost exclusively confined to children, it is relieved readily, but careful attention must be paid to the diet of the little patient, and sugars and acid fruits must be interdicted, because these substances, by depositing upon the carious teeth products susceptible of fermentation, produce inflammatory affections which propagate themselves along the nerve and become the cause of conjunctival inflammation. By this statement it is not the intention to deny that there is a phlyctenular ophthalmia of a different etiology, but this cause is a very common one.

Power cites an interesting case of corneal lesion: An abscess of the cornea occurred in a young girl accompanied by anæsthesia extending over the whole of the region supplied by the ophthalmic branch. No treatment was beneficial until the patient decided to have several carious teeth extracted which had given her much pain. From that time on there was a marked and progressive improvement.

The same action is demonstrated in the fundus of the eye by an observation of Lawrence in a case of complete cecity of one eye in a patient suffering from a carious molar. This (the molar) was extracted, and a foreign body found at its extremity, a little piece of wood, which had traversed the centre of the tooth through its carious portion and had re-

mained implanted there. The pain ceased at once, and the same evening the eye commenced to be again sensible to light. On the ninth day the patient was cured, after a cecity of 13 months.

If the irritation of the fifth pair produced in consequence of dental decay is persistent, it is perfectly possible that it should give rise to serious and permanent visual affections. The glaucoma, which is due to alteration in the nutrition of the eye, may frequently have its origin in a lesion of the dental nerves. In conclusion, Power lays down as a law that in all cases of commencing glaucoma, in myosis or mydriasis without apparent cause, in the sudden paralysis of one of the muscles of the eye, or in amaurosis not of cerebral origin, in phlyctenular conjunctiva, or in persistent ulcerations of the cornea, as well as in paralyses of accommodation, particularly in children, a careful and minute examination of the teeth must be made at the beginning, and any lesions found there must be properly attended to, for very often by so doing the affections of the eye will be relieved.

SURGERY.

MASSAGE IN STRICTURE OF THE URETHRA.—*The Midland Medical Miscellany* gives us an extract from the *Centralblatt für Chirurgie* of Dr. Géza v. Antal's experience with this treatment in a number of cases.

The difficulty of passing a sound in stricture of the urethra following gonorrhœa depends, in the majority of cases, not so much upon the simple narrowing of the urethra itself as upon proliferation of the connective tissue in the surrounding parts. This hyperplasia of the connective tissue occurs in irregular patches about the urethra in such a way as to render the canal tortuous, thus increasing the difficulty of passing an instrument to the bladder. Dr. v. Antal succeeded in inducing absorption of this hyperplasia by massage. The duration of each sitting was from eight to ten minutes, and the massage was repeated daily.

Massage of the pendulous portion of the urethra presents no difficulties, but that of the membranous and prostatic portion is possible only through the rectum. Internal massage by means of the repeated introduction and withdrawal of a sound, as recommended by Bardinet, does not commend itself to the author. It is only possible in those cases in which the stricture is already permeable, while v. Antal's method is of especial value precisely in those cases in which the urethra will not admit of the passage of a bougie. Further than this, internal massage acts only upon the thin layer of tissue immediately surrounding the urethra, while the external method causes the entire hyperplasia to disappear. The author thinks that in many cases massage will be used in preference to urethrotomy.

ECHINOCOCCUS OF THE SPLEEN.—Prof. Mosler (*Deutsche Med. Wochenschrift*) has studied 56 cases of this disease with the following conclusions:

1. Sex seems to give no predisposition toward echinococcus of the spleen.

2. The affection is most usual between the ages of 20 and 30 years.

3. As regards symptomatology, the signs of the tumor may be so slight as to give no symptom during life. In other cases the first symptom is an intense pain after some exertion, or after labor, showing inflammation of the echinococcus cyst.

4. The diagnosis rests mainly on the physical signs, and is difficult. These tumors differ from other tumors of the spleen in their fluctuation.

5. The prognosis of solitary echinococcus of the spleen is certainly more favorable.

6. Internal treatment amounts to nothing. The sac must be opened by means of scissors, and Volkmann's method for suppurating echinococcus of the spleen followed.—*Midland Med. Miscellany*.

OBSTETRICS AND GYNÆCOLOGY.

CHRONIC HEART DISEASE AND PREGNANCY.—This is the subject of an inaugural dissertation by G. Wesner, of St. Gall, who gives the following résumé, after a careful review of the literature of the subject:

1. There is no specific physiological hypertrophy of pregnancy. The heart of the pregnant woman only obeys the general law that the mass of the cardiac muscle increases with that of the body.

2. Other grounds for believing in a physiological hypertrophy are faulty, and cannot be brought into pathological relation.

3. The conditional hypertrophy of the heart, of pregnancy, caused by increased body-weight, is so slight that it can only be considered as a danger in very severe heart trouble.

4. The causes of the unfavorable influence of pregnancy on heart trouble, lie not so much in the increased cardiac activity, on account of the pregnancy, or the pressure suddenly removed by labor, and the high position of the diaphragm, as in the psychical and physical fatigue of labor, which reacts on the heart.

5. But, as statistics show, these are endured in by far the greater number of cases, without especial damage. It seldom occurs that severe heart trouble is specifically due to pregnancy, but it more usually happens that we have to do with very severe heart disease as a secondary complication.

6. As malignant endocarditis occurs especially in the course of old heart diseases, so it also seems to occur after labor, as septic poisoning.

7. The prognosis is considerably better for both mother and child, if it exists from the beginning.

8. The treatment is symptomatic, not the performance of premature delivery, but hastening labor if necessary.—(*Centralbl. für Gynäk.; Midland Med. Miscellany*).

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, OCTOBER 18, 1884.

THE DIAGNOSIS OF GASTRIC CANCER.—The difficulty of diagnosticating cancer of the stomach was set forth in a paper by Dujardin-Beaumetz at a meeting of the Société Médicale de Hopitaux the 25th of last July. The importance of differentiating this affection from gastric ulcer, gastric dilatation and chronic gastritis, with reference to prognosis and treatment, becomes apparent when we consider the relative frequency with which the stomach is the seat of cancer.

DaCosta states: (Medical Diagnosis, fourth edition, page 442) Cancer is found more frequently in the stomach than in any other organ except the uterus. Of 9,118 cases of cancer which occurred in Paris from 1837 to 1840, 2,303 were in the stomach.

According to the report of Dujardin-Beaumetz's paper, for which we are indebted to the New York *Medical Record* of October 4, there is no sign nor symptom which renders carcinoma of the stomach easy of recognition. There is no symptom that is pathognomonic of carcinoma of the stomach. At the bedside we are "usually unable to determine the precise nature of any internal tumor," and though "histology has given us a very complete list of the various forms of cancer," we are not capable of clinically distinguishing them with corresponding nicety. Cancer generally presents itself after the age of 40, and is more frequent in males than in females. But so also is gastric dilatation. As to the duration of the disease, it is said not to exceed three years. This the author pronounces incorrect, as he has observed one case in which, in all probability, it did not run its course short of 12 years. He knew of other instances where it had existed for periods longer than three years. Pain cannot be relied on, since it is not invariably present. "Painful œdema" of the extremities, which Trousseau considered as characteristic of cancer, may attend dilatation of the stomach. The coffee-grounds appearance of the *ejecta* is not trustworthy, since it is sometimes observed in gastric ulcer. Other dyspeptic symptoms are equally delusive by reason of their occurrence in chronic gastritis and dilatation. Even the presence of a tumor may be deceptive. According to the author, dilatation of this organ may exist together with thickening of the walls. Moreover, Quesnel's assertion, that the conjunction of cachexia, with a disorder of the stomach, is always proof of the affection being cancerous, is denied by Dujardin-Beaumetz. He has determined the amount of urea daily eliminated by patients suffering from cancer of the stomach, and found Romelare's statements correct in the main, though not without exception. M. Romelare declares that in gastric cancer the amount of urea excreted ranges between 120 and 150 grains in the 24 hours, whereas in ulcer it never falls below 225 grains, but varies from that up to 500 grains. Dujardin-Beaumetz found 45 grains to be the daily average of urea in one patient, and hence concluded the disorder of the stomach in this case was cancerous. The necropsy, however, showed it to have been "an hydatid cyst." The author also denies the utility of distending the stomach with gas, as do the German clinicians. On the whole, the distinguished author leaves the matter of the differential diagnosis of gastric cancer very much in the dark.

In many instances this must certainly be the case with the most of us, but, in the hands of a Mikulicz, the gastroscope appears to do much toward illuminating the obscurity. This instrument is so difficult of manipulation, that it is not likely ever to become a part of the physician's paraphernalia. In Billroth's clinic, however, it is relied on as a valuable means of diagnosis. The Americans have a reputation as skilful manipulators, and it is to be hoped they will not neglect to cultivate the ability to utilize the gastroscope.

Though this instrument be so difficult of employment, there is another which is not so, and may often yield valuable results. We mean the microscope. Though fragments of cancerous tissue are not always to be found in the *ejecta*, their presence or absence is to be determined by microscopic inspection alone. Their absence would not disprove the existence of the suspected lesion, but, on the other hand, their detection would settle the question beyond a doubt.

Again, in hospital practice distension of the stomach, either with gas or liquids, is certainly advisable, since, Dujardin-Beaumetz to the contrary notwithstanding, it is often of great practical service. Else, why its employment at Vienna, Berlin, Munich, and elsewhere?

CORRECTIONS AND ADDITIONS.—For several months past we have endeavored to have all leading papers put in type in time to have the first corrected galley proof sent to the authors for their own correction and return before the sheets were finally put through the press. In the meantime the same proof is carefully revised here in close comparison with the manuscript.

In two or three instances it has happened that the author's proof has not reached us until a few hours after the printing was completed. Such was the case with the valuable paper of Dr. T. R. Varick in the JOURNAL for the 4th inst. And in consequence our readers are requested to make the following corrections: On page 373, in 41st line from the top of the left hand column strike out the word "femoris;" and in the 45th line of the same column for "extensors of the thigh," substitute "extensors of the leg." On page 376, in 44th line from the top of the right hand column, insert the following: "In private practice I report three cases, all successful, viz.:" At the bottom of the same column what is said of the temperature, pulse, etc., should have constituted a part of the marginal "Note" in reference to the two operations since the paper was written.

The report of discussions in the Section of Obstetrics and Diseases of Women at the last annual meeting of the Association, was not only more full than from any other Section, but was also written out in plain type-writing, indicating that the Secretary had given a commendable degree of attention to the duties of his office. Nevertheless some mistakes were made, one of which consisted in giving the name of "Dr. Holman of Boston," several times in the discussion on the paper of Dr. R. S. Sutton, of Pittsburgh, published in the JOURNAL of the Association for September 20, 1884, when the name should have been Dr. John Homans, of Boston. Dr. Homans, in a letter bearing date the 6th inst., asking for a correction of his name, gives incidentally the interesting fact that he has "just had a run of 38 successful ovariotomies."

CHOLERA IN EUROPE.—During the last two weeks the cholera epidemic in France has been rapidly subsiding, the total deaths from that disease upon Oct. 7 in the whole country only reaching eight.

From Italy we have the report under date of Oct. 12 of only 239 fresh cases and 137 deaths in all the infected districts, and of these 115 fresh cases and 31 deaths occurred at Naples.

From Spain we have notice that at Madrid, Oct. 12, the *Official Gazette* announces the cholera epidemic ended, and that the bulletins will no longer appear.

We are thus relieved, for the time, of apprehension as to the immediate appearance of cholera in this country. Judging from past experiences, it is more than probable that it will reach this country during the coming year. We are thus forewarned and have ample time to do all that our present knowledge of sanitary science can suggest for the mitigation and control of this terrible scourge. The present is a time most fit for all who have the interests of the people at heart to bestir themselves for the securing of all needed sanitary legislation.

It seems to us that the time is at hand when the combined wisdom of our ablest medical men and jurists as well, should formulate a *code* of sanitary laws worthy of the age and of the nation—a code in which the interests of municipalities, the rights of States and the supremacy of the nation should be so wisely recognized that its provisions should secure universal approval—and as the law of the land an universal enforcement.

CHICAGO COLLEGE OF PHARMACY.—This excellent institution, which was organized in 1859, celebrated its twenty-fifth anniversary on Monday evening, Oct. 13, by the opening and dedication of its new college building.

The new edifice is at 465 State street, and has been designed and constructed throughout for the purposes of a College of Pharmacy, under the direction of those who are thoroughly conversant with the needs of such an institution. This college is now in all respects one of the best educational institutions of its kind in this or any other country.

DRS. F. C. HOTZ AND A. P. GILMORE VINDICATED.—Some time since a Mr. A. B. Lee brought suit for malpractice against these parties, who are members of the Surgical Staff of the Illinois Eye and Ear Infirmary of this city. Dr. Hotz was dismissed at the commencement of the trial, and the jury found a verdict of *not* guilty in regard to Dr. Gilmore. The whole charge was without adequate foundation.

NEW YORK STATE MEDICAL ASSOCIATION.—The regular annual meeting of this important organization will be held in Murray Hill Hotel, New York City, commencing on the 18th of November, 1884, and continuing four days. We are informed that the Association now numbers more than 300 members, and the coming meeting will undoubtedly be one of much interest and profit.

INTERNATIONAL COLLECTIVE INVESTIGATION.

WE ask the careful attention of all our readers to the following statement relating to the international collective investigation of disease proposed at the International Medical Congress at Copenhagen:

The general meeting of the International Medical Congress, held at Copenhagen on August 14, 1884, upon propositions made by Sir James Paget, Professor Ewald, of Berlin, Professor Bouchard, of Paris, and Dr. Billings, of Washington, passed the following resolutions:

1. That an International Committee be formed for the collective investigation of disease, in connection with the work of the International Medical Congress.

2. That the following gentlemen do represent their respective countries thereon:

As representatives of Denmark—Professor Trier, of Copenhagen; Professor C. Lange, of Copenhagen.

As representative of Scandinavia—Dr. E. Bull, of Christiania.

As representative of Russia—Dr. Rauchfuss, of St. Petersburg.

As representatives of Germany—Professor Ewald, of Berlin; Professor Bernhardt, of Berlin.

As representatives of Austria-Hungary—Professor Schnitzler, of Vienna; Professor Pribram, of Prague.

To whom was added by co-aptation—Professor Koranyi, of Buda-Pest.

As representative of Switzerland—Professor Despine, of Geneva.

As representatives of France—Professor Bouchard, of Paris; Dr. Lépine, of Lyons.

As representatives of Great Britain and Ireland—Sir William W. Gull, Bart.; Professor Humphry, of Cambridge; Dr. Mahomed, of London.

As representative of British India—Sir Joseph Fayrer, K.C.S.I.

As representatives of the United States—Professor Jacobi, of New York; Prof N. S. Davis, of Chicago.

As representative of South America—Dr. Gutiérrez-Ponce, of Paris.

As Secretary-General—Dr. Isambard Owen, of London.

Representatives of other countries to be hereafter appointed.

In accordance with the following resolution of the first meeting of the above committee, held at Copenhagen on the following day, viz.:

"That the Secretary be instructed to prepare a statement as to the objects of the committee, for translation and publication in the journals of the various countries represented;"

I beg leave to submit the following statement to the members of the medical profession of America.

ISAMBARD OWEN, Secretary-General.

5 Hertford street, Mayfair, London.

The main objects which the committee seeks to attain through the collective investigation of disease are to widen the basis of medical science, to gather and store the mass of information that at present goes to waste, to verify or correct existing opinions, to discover laws where now only irregularity is perceived, to amplify our knowledge of rare affections, and to ascertain such points as the geographical distribution of diseases and their modifications in different districts. It will be its endeavor to place clearly before the whole profession the limits and defects of existing knowledge, as well as to stimulate observation, and to give it a definite direction. It will be a not unimportant incidental result of its work should it tend, as is hoped, to the better training of the members of the profession in habits of scientific and practical observation, and in systematic methods of recording the facts which they observe.

The age in which we live has seen enormous advances in the sciences on which the fabric of medicine rests, such as chemistry and other branches of physics, physiology, and pathology. Each of these has taken giant strides. It must be admitted, however, that purely medical knowledge has scarcely made proportionate progress. It cannot be expected that it should do so, as it deals with the aberrations of the most complex of organisms, is of all sciences the most difficult, and demands the greatest patience and the largest accumulation of data.

Hitherto the advancement of medical science has been brought about mainly by individual effort. The value of such work in the past we in no way underrate, nor do we desire to lessen the amount of it in the future; but in medical science there is much that defies interpretation from individual experience, and many problems so far-reaching in an ever-widening field, with elements so manifold, that no single man, however gifted and long-lived, can hope to bring the whole within his range. The need, therefore, in medicine, of that combination and concentration of individual work which is adopted in many other branches of science and in commerce, and to which increasing facilities of intercommunication have given so much impulse and so much strength, cannot be questioned. Indeed, it may be said that, resting on individual research alone, medical knowledge can be advanced but slowly and with difficulty. Future progress to any great extent must be the work, not of units acting disconnectedly, but of the collected force of many acting as one. For many to act as one, organization is needed; that organization it is the purpose of our committee to supply.

Disease is many-sided; and we wish to include in our organization those who see it from every side. All, therefore, whether hospital physicians, family and school attendants, specialists, medical officers of the Army and Navy, and of workhouses and asylums, will be asked to contribute their quota of observation to the common fund.

In England and in Germany organizations for this purpose already exist, through which good work has been accomplished; and a volume entitled the *Collective Investigation Record*, containing tabulated returns, with reports upon them and other matter, is published annually by the British Medical Association. France and Austria are alive to the importance of the new method. In Scandinavia and in the United States the foundations of associations have been laid. Denmark, Russia, and Switzerland are setting their hands to the task. To unite these sev-

eral associations by an international organization for the study of various problems, and to induce the formation of similar combinations elsewhere, is felt to be a work peculiarly befitting an International Congress. Our committee is enjoined by the Congress at Copenhagen to endeavor to carry out this work, and, in compliance with that injunction, it invites the cooperation of all who have at heart the promotion of medical science and practice.

The following is the proposed method: A subject having been selected, a person or persons of acknowledged authority will be asked to write a memorandum, in the form of a short essay, upon it. The memorandum will succinctly give the present state of our knowledge. It will also point out the directions in which further research may best be made; and, with this view, will suggest a few simple and definite questions upon the subject selected. The questions will relate to matters of fact, to be elicited by observation of cases, rather than to matters of opinion.

The contemplated organization will, it is hoped, in time enable the committee to ask and collect answers to these questions from the profession at large wherever scientific medicine is studied or practiced. It will be a further duty to examine, arrange, tabulate, and deduce results from the mass of observations thus collected, due credit being given to each contributor for the information he has furnished; and reports on the results of the several investigators will be laid before the International Congress at its next meeting at Washington.

SOCIETY PROCEEDINGS.

AMERICAN GYNÆCOLOGICAL SOCIETY.

[*Continued from No. 15.*]

Ninth Annual meeting, held at the Palmer House, Chicago, September 30 and October 1 and 2, 1884.

Dr. Baker had a fatal case where a post-mortem examination showed a tubal pregnancy of six weeks. The sac was not ruptured, but blood, which came from a ruptured vessel at the end of the Fallopian tube, was found in the abdomen. It would have been a good case for operation.

A Case of Tubal Pregnancy with Rupture of the Sac, by Dr. R. B. Maury, of Memphis. The patient was the mother of five children. Five months after the birth of the last child she had an operation for lacerated perinæum. Later she had an obstinate bronchial catarrh and her menses stopped for five months. Still later her menses stopped again, and on account of nausea and other symptoms she suspected pregnancy. In the last of December she had abdominal pains and cramps and some hæmorrhage. Dec. 30 she had an attack of great pain and syncope. Her pulse was one hundred and fifty, and her temperature subnormal. There were symptoms of an intra-peritoneal hematocele and a tumor was found to the right of the uterus. After the patient had recovered from the shock the tumor was again found and the uterus was enlarged. The diagnosis of pregnancy with rupture of the sac was made. For four days there was severe peritonitis. On the sixth day a slight attack of pneumonia began. February 15 the tumor was still felt in Douglas' pouch. There was no hæmorrhage nor discharge.

In regard to etiology the only statement that the writer would make was that the husband had a stricture.

In regard to the treatment of these cases, Playfair advises laparotomy and ligation of the cord. Lusk, writing later, says that no one has ventured to practice this. Of the thirty-five cases of Tait in only one did he operate at the time of rupture, and that was fatal. The writer's conclusion is that laparotomy should be postponed till after recovery from shock.

In the afternoon session of Wednesday there was presented, The Limits of Vaginal Hysterectomy for Cancer, by Dr. Paul F. Mundé, of New York.

At the last meeting of the Society Dr. A. Reeves Jackson, of Chicago, read a paper strongly condemning the operation for removal of the uterus in cases of cancer. Most of the speakers who commented on the paper agreed with him, so that the impression had gone forth, not only in this country, but in Europe, that the American Gynæcological Society had passed its judgment in condemnation of the operation. If the judgment concerned only Freund's operation of hysterectomy by abdominal incision, Dr. Mundé would agree with it. The statistics are fatally against that operation. He thinks that most of the speakers last year had in mind that operation. The history of vaginal hysterectomy has been much better, and its future is much more promising.

Before considering the conclusions of Dr. Jackson in detail, Dr. Mundé gave an account of two cases of his own, not as a confirmation of his views, for the results were not good, but rather as an addition to the record. In the first case there was epithelioma of the cervix, which had been first noticed six months before. The uterus was enlarged to six or seven ounces. The patient was out of bed in twelve days after the operation, and in six weeks the wound was closed. A microscopical examination of a section of the mucosa was made by Heitzmann, and an infiltration of the tissue with small cells led him to predict a probable recurrence of the disease within two years. In fact it did recur in the cicatrix nine months after the operation. The second case was operated on Nov. 9, 1883. The uterus weighed three and one-half ounces. The epithelioma had extended to the vaginal vault. The hæmorrhage during the operation was great, and the patient died forty-eight hours later from shock.

The writer next considered the conclusions of Dr. Jackson which were three. First, the diagnosis cannot be made sufficiently early. Second, when the diagnosis is made there is no hope for a cure. Third, the operation is very dangerous to life.

The failure of an early diagnosis is due to the fact that the patient does not go early enough to the gynæcologist. The microscope will tell if the infiltration has begun. The laity should be impressed with such

fear of a purulent discharge that every woman would seek advice upon the appearance of the first symptoms. Out of eight hundred and twelve cases of cancer Schroeder found thirty-four suitable for operation. Ohlhausen had thirty-two. Out of one hundred and sixty cases of his own Dr. Mundé has operated but twice, and neither of those cases does he now consider suitable for operation.

The operation is of such recent origin that the facts bearing on the cure or recurrence of the disease are meagre. Of the eighty-two cases that have lived more than two years after the operation, in forty-eight there has been a recurrence of the disease in from two months to two and one-half years. Thirty-two, or thirty-nine and two-tenths per cent., are well after two years. This showing is better than that for any other cancers. It is twice as good as the record of Billroth's cancer operations. Yet when the disease returns the palliative results may be important. If it produce a temporary freedom from the disease, if it diminish pain, its value is not to be overlooked. Of course if the parametrium is involved palliative measures, as curetting, partial excision, cauterizing, etc., should be employed.

In considering its danger the writer compared its mortality with that of other cancer operations. Billroth has operated for mammary cancer one hundred and seventy times, with thirty-four deaths, or twenty per cent; for lingual cancer forty-two times with eighteen deaths, or forty-five per cent.; for rectal cancer nine times with five deaths or fifty-three per cent. Rosé (Marburg) has had a mortality, for mammary cancer of twenty-six and three-tenths per cent., for rectal cancer of fifty-three per cent., for lingual cancer of eleven per cent. Schroeder had one hundred and five high vaginal amputations with thirteen deaths, or twelve and three-tenths per cent. In his (Freund's) operations sixty-two per cent. died. In thirteen cases of supra-vaginal amputation by laparotomy thirty per cent. died. All cases of vaginal hysterectomy that have been reported number two hundred and fifty-six. Of these sixty-two, or twenty-four and six-tenths per cent. have died. The Philadelphia *Medical News* for Sept. 19, 1883, gave one hundred and sixty-seven operations as having been performed at that time. Of these there were fifty-two deaths, or about thirty-one per cent. Thus it is seen that with the increase in the number of operations, with increase of technique, with a more careful selection of cases, there is a decrease in the mortality.

The present status of the operation may be given in an answer to two questions: 1. Can vaginal hysterectomy for uterine cancer be performed without so great a loss of life as to render it unjustifiable? 2. Can we hope to secure by it complete immunity from a return of the disease? The first question can be answered in the affirmative. No answer can be given to the second question till the operation is older.

The following conclusions state the conditions and indications for the operation: 1. Limitation of the cancerous degeneration to the uterus and absolute freedom from disease of the parametrium. (Of course the disease must extend above the level of the vaginal vault and be beyond simple amputation or excision). If the finger in the vagina or rectum detect the slightest infiltration of glands, lymphatic vessels or cellular tissue, or the microscope reveal doubtful cell formation in sections of mucous membrane removed from the vaginal vault, complete extirpation should be abandoned. 2. Cancer of the cervix extending up the cervical canal to a height the precise limit of which is doubtful, thereby rendering the probability of complete removal of the disease by high supra-vaginal amputation and cautery extremely doubtful. 3. Cancer or sarcoma of the body of the uterus. (Schroeder's method of intraperitoneal amputation of the corpus uteri might be substituted. There have been seven operations with two deaths. No recurrence within two and one-half to five years in four cases. The fifth could not be traced). 4. Perfect freedom of motion of the uterus, so that it can easily be drawn down to the vulva by traction on the cervix and can be moved in any direction. This condition is absolutely indispensable. 5. A capacious vagina, permitting ready exposure of the cervix and vaginal vault and easy manipulation of ligatures and instruments. Section of the perinæum should be admitted only when a narrow vagina is the sole obstacle to a surgical operation. 6. A sufficiently vigorous condition of the general system, such as absence of other serious organic disease of other organs, so as to permit the patient to stand the shock which, however, is as a rule much less than the gravity of the operation would lead one to expect. Cachexia, if present, will probably denote such progress of the local disease as to contraindicate the operation.

In the spirited discussion which followed, Dr. Mundé replied to questions as to what was meant by recoveries in the mortality statistics that he did not know the time of death in each case, nor did he consider it important. All the deaths that were due to the operation were included in the mortality list, whether the patient died on the table or several days later.

Dr. Jackson stated that every therapeutic measure, surgical or medical, must be judged by certain underlying principles. Every surgical measure must relieve suffering or prolong life. If cancer returns it brings with it the same pain. Hence, unless the operation cures it does not relieve suffering. Over two hundred years of life have been lost by the operation. This statement is based upon statistics which show that the average length of life after discovery of a cancer of the cervix is eighteen months, and after discovery of cancer of the body it is two and one half years. The other factor in the computation is the mortality, which a year ago was 28 per cent.

The microscope can detect cancer, but it cannot tell how far it has extended, for the extension is not always by the involvement of contiguous tissues. What is meant by a successful operation? If the disease reappears it was not a success. Recurrence is not a proper term; the disease continues. The operation then is only a partial removal.

Dr. Van de Warker reminded the Society of the old opposition to ovariotomy, and thought that this operation should not yet be judged. He thought

that the cases should be divided into two classes: first, menstruating women; second, women who have passed the climacteric. In the first class he suspected that the dangers of an operation were greater.

Dr. Engelmann held that we are justified in testing the operation.

Dr. Palmer thought that the mortality would probably be reduced to ten per cent. He thought that the operation should be limited to sarcomata starting in the uterus on account of the impossibility of determining, in cases of carcinoma, whether the pelvic glands are involved or not.

Dr. Baker has operated six times, and in only one case has there been recurrence. The rest are healthy.

Dr. Scott thought that the camp was divided between the young fellows and the old fellows. He gave the history of a case which seemed favorable for operation. The uterus was small and perfectly mobile. The operation was not difficult. There was no hæmorrhage. The patient made a good recovery and fattened. But in seven months later the disease returned, and in two months more she died.

Dr. Reamy said that this operation had no analogy to ovariotomy, and any comparison was irrelevant. An ovarian cyst never returned. He spoke of a case where a patient was living three years after the discovery of a cancer, no operation having been performed. Also of another case where a patient lived four and one-half years. He thought it important to collect more of these cases. The statistics of the operation have improved, but the statistics of recurrence have not improved. He held that if the cancer is confined to the cervix, amputation should be performed. If the cancer extends to the body, the diagnosis of the extent of infiltration cannot be made, and no operation is justifiable.

Dr. Fenger, of Chicago, thought that there was theoretical reason for the operation where amputation was not sufficient, and he believed that the operation would go on until it justified itself.

In the evening a business meeting was held, with closed doors. The following offices were elected for next year: President, W. T. Howard, of Baltimore; Vice-Presidents, W. L. Richardson, of Boston, and Paul F. Mundé, of New York; Secretary, Frank P. Foster, of New York; Treasurer, Matthew D. Mann, of Buffalo; other members of the Council, J. T. Johnson, of Washington; A. Reeves Jackson, of Chicago; H. P. C. Wilson, of Baltimore; Eli Van de Warker, of Syracuse. The limit of membership was increased to 100. It was decided to hold the next meeting of the Society in Washington, on the third Tuesday of September, 1885.

The first paper presented at the morning session of the third day was the President's address. The Present Aspect of the Puerperal Diseases, by Dr. Albert H. Smith, of Philadelphia. He spoke first of the brilliant career of gynæcology, especially in the field of abdominal surgery, and of the promise for the future. He also alluded to the charge that with the rise of the specialty there had been a decrease in the feeling of modesty and a lowering of the moral tone of women, and showed how it should be disproven by care for the cultivation of a pure literature and classroom teaching.

The President then stated the different theories of purperal fever held by the essentialists, represented in this country by Barker, and the infectionists, represented by Thomas. The latter class he divided into the followers of Semelweiss, who believe that puerperal fever, like any surgical fever, results from the absorption of decomposing matter either heterogenetic or autogenetic, and the disciples of Pasteur who hold that microbes are the cause of the disease. He gave his reasons at length for differing from the essentialist theory and also from the microbe theory, holding with Billroth that microbes are present in the disease, but it is not shown that they have any causative relation to it. He thought the latter theory did harm in ascribing undue importance to the microscopic character of the lochia, and also because of the discouragement concerning treatment that must attend its acceptance by the young doctor.

In regard to treatment, he emphasized the importance of clean hands and irrigation of the vagina and uterus when necessary. For a uterine douche he used a sublimate solution, one in a thousand, at a temperature of 115° F. He closed by describing his method of washing the uterus. A hole is made in the end of a rectal bougie of the Davidson syringe and an English catheter is carried through the bougie till its end is outside the perforation. The solution is introduced through the catheter while the bougie allows the return of the liquid.

Dr. Edward Warren Sawyer, of Chicago, then read a paper entitled Some Remarks on the Occipito-Posterior Position in Vertex Labors; with an Analysis of Thirty-eight Cases.

The writer has had thirty-eight cases in three hundred and forty-nine labors, or about one in five. In three the occiput was to the left and in thirty-five to the right. Twenty-six cases were in primiparæ. This fact suggests, concerning the etiology of the condition, that the unyielding abdominal walls of the primipara do not conform well to the back of the fœtus and force it into the hollow of the spinal column. Dr. Sawyer thinks that the occiput does not rotate forward as often as is generally taught. The rotation occurred in only two of his cases. In many of the cases there were imperative indications for interference before the vertex reached the floor of the pelvis, but had he waited he did not believe that rotation would have occurred. He would never leave the fœtus stationary more than two hours on account of danger to the soft parts of the mother. As soon as a positive diagnosis is made, which can be accomplished by introducing the hand in front of the face, he would endeavor to rotate the head by combined external and internal manipulation with the hands. When it became necessary to deliver the child by forceps he called attention to the importance of keeping the head flexed and making traction in the right direction. For this purpose he recommended his modification of Simpson's forceps, which consisted in giving the instrument a continuous posterior curve.

Dr. Richardson believed that the head would rotate when it reached the pelvic floor if it were kept prop-

erly flexed. Improper use of the forceps was generally the reason why it was sometimes caught in the middle strait partly extended. The proper treatment in such case was to introduce the forceps and produce flexion. For this purpose he often used the forceps reversed.

Dr. Reamy thought that rotation would generally occur, but he agreed with Dr. Sawyer in the statement that interference is best to diminish suffering and to lessen danger to both mother and child. The time for interference is when dilatation is sufficient. The forceps should be thoroughly applied, and the head pushed up as far as possible and rotated. The dorsal position of the patient is best.

Drs. Johnson, Howard and Englemann made remarks.

President Smith said that nothing was known concerning the etiology of the position. In regard to interference, if the diagnosis is made before the head is engaged, place the patient in the knee-elbow position and introduce the hand and gently rotate. Never attempt to rotate after engagement of the head. The best way is to put on the forceps and move the head on its biparietal axis to complete flexion. Then reapply the forceps and make traction, leaving nature to rotate, or the whole may be left to nature after flexion is completed.

At the afternoon session the President-elect, Dr. Howard, was introduced. The thanks of the Society were then given Dr. Smith.

Dr. Geo. J. Engelmann, of St. Louis, next read a paper on A Rare and Fatal Form of Sepsis without Symptoms.

This dangerous and little recognized form of sepsis is characterized, negatively, by a more or less complete absence of fever, pain and the other symptoms of septicæmia. Intuition rather than skill seems necessary for its diagnosis. It may be acute or chronic, heterogenetic or autogenetic. Where the prognosis seems good and the symptoms least the danger is greatest. It disproves Barker's statement when he says that the intensity of the symptoms shows the amount of poison absorbed and the danger. Several typical cases are given to illustrate this characterization and prove the fatality of the disease.

Dr. Richardson had had five or six cases which confirmed the writer's statements. He had noticed a slight diarrhœa in all of his cases. But the most remarkable fact was the peculiar mental condition of the patient, who seemed to herself to be doing nicely till the last. The paper was further discussed by Drs. Meyers, Reamy and Johnson.

After the reading of the following papers by title the Society adjourned:

The Physiognomy of the Vulva as a Sequence of Anal Disease, and the Cause or Sustaining Cause of Uterine Disease, by Dr. Isaac E. Taylor, of New York.

The Early History of the Treatment of Vesico-Vaginal Fistula in the United States, and the Statistics of the Several Modes of Operating, by Dr. Nathan Bozeman, of New York.

Periodical Symptoms in Uterine Disease, by Dr. George J. Englemann, of St. Louis.

Contributions to the Topographical and Sectional Anatomy of the Female Pelvis, by Dr. David Berry Hart, of Edinburgh.

Fibro-Myomata and Fibro-Cystic Myomata of the Uterus—their Diagnosis, Prognosis, Pathology and Treatment; with Cases and Specimens, by Dr. R. Stansbury Sutton, of Pittsburgh.

On the Ring of Baudl, by Dr. William T. Lusk, of New York.

FOREIGN CORRESPONDENCE.

PARIS LETTER.

PARIS, September 24, 1884.

The value of blood-letting in the treatment of apoplexy was lately discussed at the Therapeutic Society of Paris, when most of the members condemned the practice as a mere routine measure. Even the non-professional public are so imbued with the idea that bleeding is indispensable in this case, that a certain amount of pressure is put on the medical attendants to open a vein, and should the case prove fatal without the operation being performed, the unfortunate physician is sure to be blamed. Dr. Dujardin-Beaumetz does not approve of blood-letting in the condition usually termed apoplexy, which has no definite signification. Apoplexy may result from the rupture of a miliary aneurism, or from cerebral anæmia, whether produced mechanically or otherwise. In either case the drawing of blood would not only be useless, but positively dangerous, as it would tend to weaken the patient unnecessarily, and fulfil no useful indication. Even in cerebral inflammation nothing is to be gained by it. The only case in which the orator thought blood-letting might prove useful was congestion of the brain, in which case it is employed to prevent an attack of apoplexy, but the diagnosis of such a condition is not always an easy matter. Whenever, however, the patient is affected with hemiplegia, and this lasts for any time, even twenty-four hours, one may with certainty conclude that it was not caused by cerebral congestion, but by hæmorrhage or anæmia. We shall therefore have to resort to other measures, such as revulsives, which are as efficacious, but less dangerous than blood-letting.

The question as to whether a tuberculous patient suffering from fistula in ano may be operated on for the cure of the latter has often been mooted in the profession, and Dr. Jannel has again brought the subject before the Surgical Society of Paris. After a discussion pro and con, Professor Verneuil concluded that from his experience he thought it advisable that the operation, if necessary, should be performed as early as possible; for the longer it is put off the greater the risk to the patient, and to the success of the operation which will relieve him of an infirmity which, if left to itself or treated by palliatives, can but aggravate his general condition.

M. Ritter lately brought to the notice of the Pharmaceutical Society of Paris the vesicant properties of chloral, which may be utilized in certain cases

where it would be unsafe to employ the ordinary blisters made of cantharides. Spread on sticking plaster, which is slightly heated and applied to the skin, powdered chloral produces in a very short time and without great pain the same effect as a Spanish fly blister, which is produced about six hours after its application. In this form the chloral possesses the sedative and analgesiant properties which may be utilized in the treatment of neuralgic and rheumatic pains.

M. Mairet has communicated a work to the Academy of Sciences on the biological relations between phosphoric acid on the one hand, and general nutrition and the nutrition of muscle on the other, and after a series of observations he summed up his conclusions as follows:

1. With reference to muscular work, when the intensity of the latter surpasses the richness of the food, it increases the elimination by the urine of the nitrogen and phosphoric acid combined with alkalies.

2. The muscles employ phosphoric acid to produce work; the phosphoric acid which is found in excess in the urine under the influence of muscular work is the phosphoric acid of the wasted tissues.

3. The elimination of phosphoric acid is connected with the nutrition and function of the muscles; muscular work marks its action on the phosphoric acid eliminated by the urine in increasing the amount of alkaline phosphates.

At a subsequent meeting M. Mairet brought to the notice of the Academy the modifications which intellectual work produces on the elimination of phosphoric acid, and the relations that exist between this acid and the nutrition of the nervous system. In this paper the author makes out, 1, that phosphoric acid is intimately connected with the nutrition and the function of the brain. In its functions the brain absorbs the phosphoric acid combined with the alkalies and sets free the phosphoric acid of the earthy salts. 2, that intellectual work retards the general nutrition. 3, that intellectual work modifies the elimination of phosphoric acid by the urine, it diminishes the phosphoric acid combined with the alkalies and increases the phosphoric acid of the earthy salts.

It is curious to note that while there is a growing tendency in the profession towards specialism, specialists show a tendency to extend their views in a more general way. At a clinical lecture at the Hotel-Dieu, Professor Panas endeavored to impress on his hearers the necessity of medical men to have a greater scope in their professional education so as to be able to deal with all cases that may be submitted to their care without always having resource to specialists.

This advice is all the more valuable as it comes from a gentleman who, though a general surgeon, has adopted ophthalmology as a specialty without prejudice to his other attainments as surgeon and physicians. As an ophthalmologist, however, he felt bound to dwell upon the importance of this branch of medicine and surgery, as it is too often depreciated, and those who occupy themselves specially with the diseases of the eye are generally looked down upon and are even at times ranked among quacks. Those who act thus, he added, forget that the immortal discovery of Helmholtz has rendered ophthalmology the surest, and the best known branch of medicine; they forget also that, thanks to the ophthalmoscope, one can study the phenomena of the circulation, a thing which can not be done directly with the eye in any other part. Moreover, the eye is found to be the seat in which may be reflected general or constitutional affections.

Hence Professor Panas concludes that a regular ophthalmologist, far from confining his knowledge to the eye, ought to be an encyclopedist. It is an opinion also widely spread in the profession that ophthalmology constitutes only an insignificant part of medicine, and he has often heard it repeated that one or two months suffice to learn the science of ophthalmoscopy, and it is against this idea that Professor Panas directs his efforts. In concluding his lecture, the learned professor expressed himself to the following effect: "Scarcely a day passes without my being required to give my advice whether in a prognostic or diagnostic point of view, on general affections in patients sent from the different hospitals or by general practitioners. This fact will serve to show the necessity of studying ophthalmology, which is daily increasing in importance, and the ophthalmoscopic examination of patients is as necessary as that by auscultation or percussion, or the analysis of the urine. The ophthalmoscope not only helps the physician in his diagnosis of a general malady, but it often leads him to the discovery of a morbid condition that would otherwise have escaped his attention."

In a very interesting article reproduced in the "*Journal d' Oculistique*" of Paris, on the influence of hot entire baths and hot footbaths on the ocular circulation, the author, Dr. Kacavurow, states that he had performed experiments on 15 subjects, 12 of whom had sound eyes. The temperature of the water of the bath was 104° F.; the duration of the immersion of the body was 15 minutes. In the majority of the cases, the optic papillæ were pale; the arteries of the retina were diminished in calibre; the veins of this membrane were slightly distended; the intra-ocular pressure was diminished. The author attributed these phenomena to the weakening of the action of the heart and to the lowering of the blood pressure. He however concludes that the preceding effects are too weak and too uncertain to induce practitioners to introduce whole baths into ocular therapeutics. As for footbaths, the author thought that they had a very different effect from what they are generally supposed to have. In the 15 subjects on whom the experiments were performed the pediluvia produced no paleness of the optic papillæ, nor a diminution of the calibre of the arteries, nor any lowering of the intra-ocular pressure. In the greater number of the cases, there were on the contrary evident phenomena of congestion of the eye which lasted about ten minutes after the footbath. A. B.

BOOK REVIEWS.

HEALTH AND HOW TO PROMOTE IT, FROM INFANCY TO ADVANCED AGE. By RICHARD MCSHERRY, M.D. Second edition. D. Appleton & Co., New York: 1884. Cloth; 185 pages.

As stated in the preface, the author directs "attention principally, almost entirely, to personal matters under individual control; that is, to what each individual may do for himself."

The style is simple and pleasing, and not at all technical. The fault of the work grows from the fact of its unscientific nature, and from its compilation from various, often conflicting writers. This may be illustrated by the remarks on alcohol. He says it is "a stimulant in small doses, a narcotic in large doses." This is true only of certain individuals, or of certain functions of the body. The normal effect of alcohol on the healthy individual is probably always narcotic. At another page this fact is made evident by a reference to Mr. Bryant, who is quoted as saying: "I am a natural temperance man, finding myself rather confused than exhilarated by wine." And again, in a quotation from Dr. Edes: "It may be doubted whether such a condition as true stimulation by alcohol exists for the perfectly healthy man in a normal condition. The early phenomena, if carefully observed, are better explained as the beginning of intoxication."

The book is worthy of a place in popular medical literature, for its perusal will benefit and enlighten the average citizen respecting many things of which he is often grossly ignorant.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT UNITED STATES ARMY, FROM OCTOBER 4, 1884, TO OCTOBER 10, 1884.

Clements, B. A., Major and Surgeon, in addition to present duties, to take charge of the office of the Medical Director of the Dept. during the temporary absence of that officer. (Par. 1, S. O. 195, D. of Mo., Sept. 29, 1884.)

Happersett, John C. G., Major and Surgeon, will be relieved from duty in Dept. of the East and ordered for duty at Willet's Point, New York.

Woodruff, Ezra, Captain and Assistant-Surgeon, granted leave of absence for 4 months. (S. O. 235, A. G. O., Oct. 7, 1884.)

Cronkhite, Henry M., Captain and Assistant-Surgeon, assigned to duty as Post Surgeon, Fort Reno, Ind. T. (S. O. 197, D. of Mo., Oct. 2, 1884.)

Crampton, L. W., Captain and Assistant-Surgeon, granted leave of absence for 1 month and 10 days. (S. O. 60, Hdqr's Div. of Atlantic, Oct. 2, 1884.)

Powell, J. L., Captain and Assistant-Surgeon, granted leave of absence for 1 month, on surgeon's certificate of disability.

Spencer, Wm. G., Captain and Assistant-Surgeon, granted leave of absence for 1 month. (S. O. 204, Hdqr's Dept. East, Oct. 8, 1884.)

McCreery, Geo., First Lieutenant and Assistant-Surgeon, assigned to duty at Fort Meade, D. T. (S. O. 115, Hdqr's Dept. of Dak., Oct. 6, 1884.)

Taylor, A. W., First Lieutenant and Assistant-Surgeon, assigned to duty at Fort Omaha, Neb. (Par. 3, S. O. 87, Hdqr's Dept. Platte, Oct. 3, 1884.)

Black, C. S., First Lieutenant and Assistant-Surgeon, granted leave of absence for 15 days, to take effect this date. (Par. 3, S. O. 131, Hdqr's D. of Tex., Sept. 29, 1884.)

OFFICIAL LIST OF CHANGES IN MEDICAL CORPS OF THE NAVY DURING THE WEEK ENDING OCTOBER 11, 1884.

Lippincott, G. C., Passed Assistant-Surgeon, granted sick leave Oct. 4, 1884.

Whiting, Robert, Passed Assistant-Surgeon, to the Naval Hospital, New York, Oct. 6, 1884.

Brown, S. A., Passed Assistant-Surgeon, resignation accepted, Oct. 7, 1884.

Brush, George R., Surgeon, detached from the Vandalia, and placed on waiting orders, Oct. 8, 1884.

Craig, Thos. C., Passed Assistant-Surgeon, detached from the Vandalia, and placed on waiting orders, Oct. 8, 1884.

Ayers, Jos. G., leave of absence for 1 month, Oct. 10, 1884.

Oberly, A. S., Surgeon, to the Naval Hospital, Portsmouth, N. H., Oct. 10, 1884.

Cleborne, C. J., Medical Inspector, detached from duty at Portsmouth, N. H., and placed on waiting orders, Oct. 10, 1884.

Steele, Jno. W., Passed Assistant-Surgeon, detached from the Brooklyn, and placed on waiting orders, Oct. 10, 1884.

Boyd, Jno. C., Passed Assistant-Surgeon, to duty at Navy Yard, Washington, D. C., Oct. 10, 1884.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, JULY 1, 1884, TO SEPTEMBER 30, 1884.

Bailhache, P. H., Surgeon, to proceed to Delaware Breakwater Quarantine Station as inspector, September 10, 1884; to investigate reported pollution of Potomac River water supply, September 20, 1884.

Miller, T. W., Surgeon, granted leave of absence for fourteen days, July 10, 1884; detailed as president Board of Examiners, September 2, 1884.

Wyman, Walter, Surgeon, detailed as member of Board of Examiners, September 2, 1884.

Long, W. H., Surgeon, granted leave of absence for twenty days July 30, 1884.

Purviance, George, Surgeon, detailed as recorder Board of Examiners, September 2, 1884.

Stoner, G. W., Passed Assistant Surgeon, to proceed to Lewes, Del. (Delaware Breakwater), as inspector, July 25, 1884; to act as quarantine officer at Delaware Breakwater, July 31, 1884.

Fisher, J. C., Passed Assistant-Surgeon, granted leave of absence for thirty days, August 23, 1884.

Goldsborough, C. B., Passed Assistant-Surgeon, granted leave of absence for thirty days, July 12, 1884; leave of absence extended thirty days on surgeon's certificate of disability, August 11, 1884; leave of absence extended thirty days, without pay, September 11, 1884.

Heath, W. H., Passed Assistant-Surgeon; granted leave of absence for thirty days, September 8, 1884.

Guitéras, John, Passed Assistant-Surgeon, granted leave of absence for thirty days, September 24, 1884.

Banks, C. E., Passed Assistant-Surgeon, granted leave of absence for thirty days, August 27, 1884.

Bennett, P. H., Assistant-Surgeon, to proceed to Buffalo, New York, for temporary duty, September 19, 1884.

Glennan, A. H., Assistant-Surgeon, to proceed to Mobile, Alabama, for temporary duty, July 7, 1884.

RESIGNATION.

Fisher, J. C., Passed Assistant-Surgeon, resignation accepted by the Secretary of the Treasury, to take effect September 30, 1884, August 21, 1884.